

South San Francisco Bay Tidal Marsh Vegetation and Elevation Surveys— Corkscrew Marsh, Bird Island, and Palo Alto Baylands, California, 1983

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Conversion Factors, Vertical Datum, and Acronyms

Multiply	By	To obtain
meter (m)	3.281	foot
square meter (m ²)	10.786	square foot (ft ²)

Horizontal coordinate information is referenced to the “North American Datum of 1983 (NAD 83).”

Vertical coordinate information is referenced to Mean Lower Low Water (MLLW) relative to the National Tidal Datum Epoch (1960-78).

Acronyms

GIS, Geographic Information System

MHW, mean high water

MLLW, Mean Lower Low Water

NOAA, National Oceanic and Atmospheric Administration

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South San Francisco Bay Tidal Marsh Vegetation and Elevation Surveys—Corkscrew Marsh, Bird Island, and Palo Alto Baylands, California, 1983

By James L. Orlando, Judy Z. Drexler, and Kent G. Dedrick

Abstract

Changes in the topography and ecology of the San Francisco Bay Estuary (“Estuary”) during the past 200 years have resulted in the loss of nearly 80 percent of the historical salt marsh in the region. Currently, numerous projects are being undertaken by federal, state, and local governments in an attempt to restore wetland habitat and ecosystem function at a number of locations within the Estuary. Much information is needed concerning the historical topographic and ecologic characteristics of the Estuary to facilitate these restoration efforts.

This report presents previously unpublished vegetation and elevation data collected in 1983 by the California State Lands Commission at Corkscrew marsh, Bird Island, and Palo Alto Baylands, all located in South San Francisco Bay. These precise and detailed elevation and plant surveys represent a snapshot of South Bay flora before invasion by the Atlantic smooth cordgrass, *Spartina alterniflora*. Such precise elevation data are rare for relatively undisturbed marshes in the San Francisco Bay; publication of these historical data may facilitate wetland restoration efforts.

Marsh-surface and tidal-channel elevations were determined at a total of 962 stations by differential leveling to established tidal benchmark stations at each site and referenced to Mean Lower Low Water (MLLW) relative to the National Tidal Datum Epoch (1960–78). In addition, presence or absence of nine salt marsh species, percentage plant cover, and percentage bare soil were recorded for 1-m² quadrats at 648 stations where elevations were determined.

Collectively, over the three sites, salt marsh vegetation ranged in elevation from 0.98 to 2.94 m above MLLW. *S. foliosa* and *Salicornia virginica* were the most frequently observed plant species. *Atriplex patula*, *Deschampsia cespitosa*, and *Limonium californicum* were each recorded at only one of the three sites.

Introduction

Background

Beginning with the earliest European settlements, the land use and ecology of the San Francisco Bay Estuary (hereinafter, the “Estuary”) have undergone vast changes. Over the past 100 years, the population of the San Francisco Bay area has increased by about 1,500 percent, to over 6.8 million people in 2003 (U.S. Census Bureau, 2004). Accompanying this dramatic rise in population has been a significant loss of natural habitat (Nichols and Wright, 1971; Dedrick, 1989). It has been estimated that during the period since about 1800, 79 percent of the salt marsh in the Estuary has been lost (Goals Project, 1999). Additional studies also indicate a similarly dramatic decrease in the number of tidal channels in the Estuary (Dedrick and Chu, 1993). Habitat loss within the Estuary is currently the subject of intense study by state and federal agencies and private organizations. Numerous habitat restoration projects are being conducted to reverse the trend of habitat loss. These projects will result in a significant increase in tidal marsh and open water acreage within the Estuary; one project alone, the South Bay Salt Pond Restoration Project, consists of 16,500 acres (Martin, 2004).

A crucial factor in these restoration efforts is a sound understanding of the environmental conditions that are most conducive to plant colonization. Specifically, the elevation ranges with respect to the tide that are required for establishment and subsequent areal expansion of particular plant species must be fully understood if restoration is to be successful.

Purpose and Scope

This report presents previously unpublished, detailed, vegetation and elevation survey data collected by the California State Lands Commission and Dr. H. Thomas Harvey at three relatively undisturbed salt marsh areas along the southwestern shore of San Francisco Bay, California, in August and November of 1983. The U.S. Geological Survey is publishing these data now because of the historical and ecological importance of a highly precise elevation data set for common salt-marsh plant species in South San Francisco Bay. In particular, these data represent a rare picture of South Bay salt-marsh flora before invasion by the Atlantic smooth cordgrass, *Spartina alterniflora* (see Callaway and Josselyn [1992] for sphere of influence of *S. alterniflora* as of 1992).

The data presented in this report consist of marsh-surface and tidal-channel elevations at a total of 962 stations that were measured above local Mean Lower Low Water (MLLW) and were based on the National Tidal Datum Epoch (1960–78). In addition, supplementary data consisting of percentage cover for bare ground and nine plant species were recorded at 648 stations.

Plant Nomenclature

In the field notes taken by Drs. Kent Dedrick (California State Lands Commission) and H. Thomas Harvey (private consultant), the plant species observed were listed by the following names: *Atriplex patula*, *Deschampsia*, cordgrass, *Franke-
nia*, *Jaumea*, *Grindelia*, *Limonium*, pickleweed, and saltgrass. Because these names, with the exception of *A. patula*, are either incomplete and (or) confusing (that is, only genera are listed for some and only common names for others), the following procedure was used to determine the actual plant species denoted by each of the names. First, the geographic ranges of particular species matching the common names and genera of the above were obtained from The Jepson Manual (Hickman, 1993). Next, all field notes were checked for any information regarding unusual or rare plant occurrences. Because there were no notes regarding any rare or unusual species being sighted, it was decided that the species recorded in the notes likely signify the common marsh plants found in the low, middle, and high salt marsh zones of South San Francisco Bay. Baye and others (2000), a reference describing the tidal marsh plant communities in the San Francisco Estuary, was consulted in determining species names for each of the plants (table 1).

Acknowledgments

This report was funded through the U.S. Geological Survey's Federal Matching Funds Program. The data presented in this report are the result of the hard work and

dedication of Kent G. Dedrick, who personally and professionally sought to protect the San Francisco Bay Estuary, and without whom these data would not have been preserved. His death was a great loss to many. The authors also wish to acknowledge personnel of the California State Lands Commission who conducted the original elevation surveys described herein as well as the late Dr. H. Thomas Harvey, Harvey and Stanley Associates, who contributed greatly to the original project through his expertise and hard work.

Study Design and Methodology

Description of Study Sites

Data were examined for three areas of relatively undisturbed salt marsh located along the southern shores of San Francisco Bay. The marsh areas surveyed are located on Bair Island (hereinafter referred to as Corkscrew marsh), Bird Island marsh (hereinafter referred to as Bird Island), and at the Palo Alto Baylands marsh (hereinafter referred to as Palo Alto Baylands) (fig. 1). Both Corkscrew marsh and Bird Island are currently part of the 30,000-acre Don Edwards San Francisco Bay National Wildlife Refuge, whereas the Palo Alto marsh site is located within the 1,940-acre Palo Alto Baylands Preserve.

Corkscrew Marsh

The area consists of a 31.1-acre tract of marsh bordered by Corkscrew Slough on the north, west, and east, and by a former salt evaporation pond to the south (fig. 2). The area is of predominantly low relief and is to a great extent affected by tidal action. There are numerous small, shallow channels that extend into the marsh from Corkscrew Slough. The area became part of the Don Edwards San Francisco Bay National Wildlife Refuge in 1998.

Bird Island

Bird Island is located northeast of the Corkscrew marsh site and is separated from the bay margin by a narrow slough. The area consists of approximately 87 acres of salt marsh and is elongated in an east–west direction (fig. 3). Numerous narrow channels enter the island from the south and extend northward. Generally, these channels do not completely traverse the island. The northern edge of the island is exposed directly to San Francisco Bay and is subject to overtopping by wind driven waves. The marsh is also part of the Don Edwards San Francisco Bay National Wildlife Refuge.

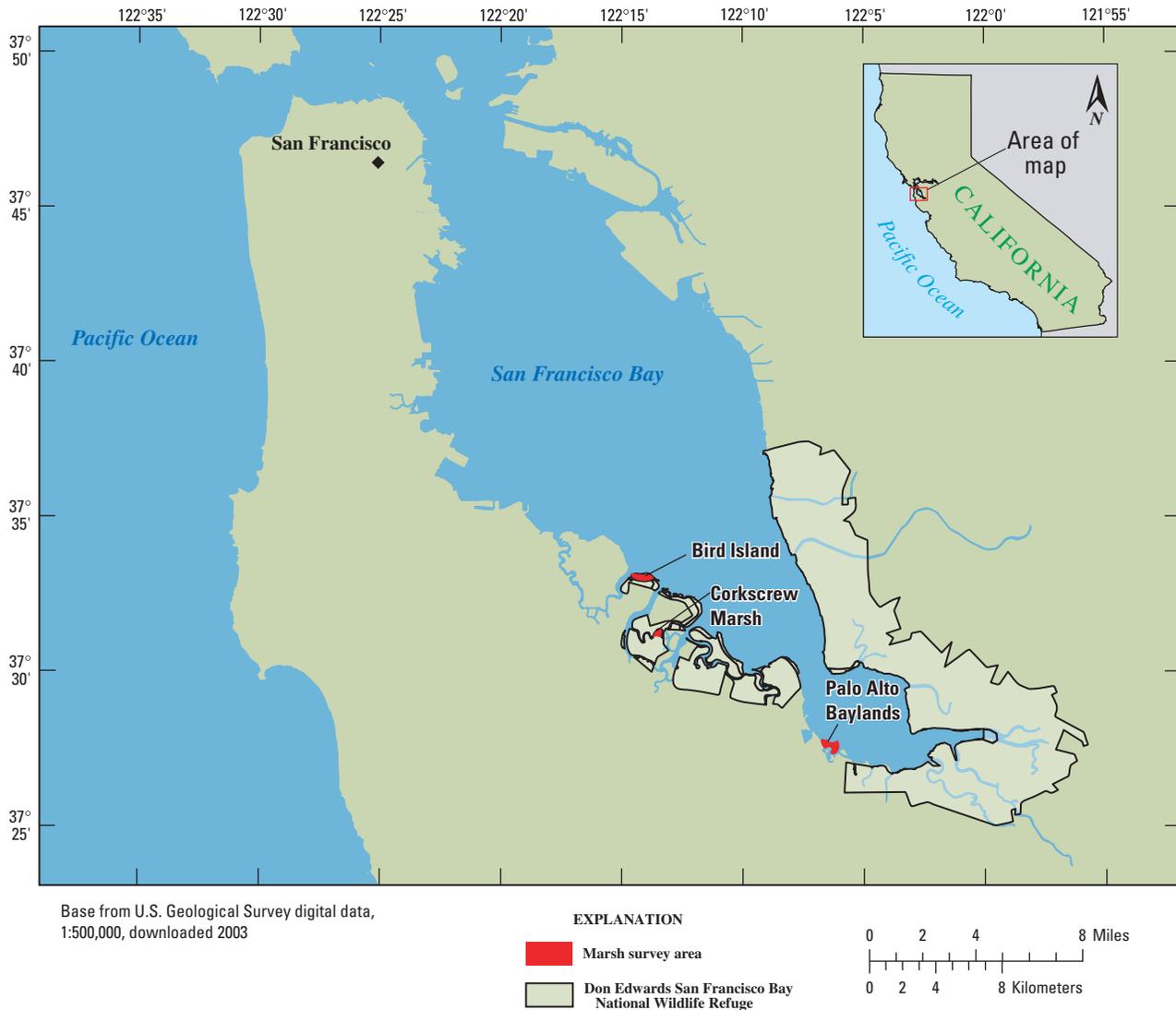


Figure 1. Location of survey sites in South San Francisco Bay.

Palo Alto Baylands

The marsh surveyed at this site is directly north of the Palo Alto yacht harbor and occupies approximately 90 acres within the larger Palo Alto Baylands Preserve (*fig. 4*). The area is currently open to the public and is immediately adjacent to the Lucy Evans Baylands Nature Preserve Interpretive Center. A small number of shallow channels enter the area from San Francisco Bay to the north. Two boardwalks crisscross the area, one providing public access to the marsh and the other for restricted access to power transmission lines, which traverse the marsh. The area is open to tidal influence.

Description of Elevation and Vegetation Surveys

Elevation surveys performed at each of the three sites were conducted by the California State Lands Commission.

Standard differential leveling survey techniques were used in all instances (U.S. Army Corps of Engineers, 2002). Precise elevations were determined by differential leveling relative to tidal benchmarks established by the National Oceanic and Atmospheric Administration National Ocean Service in 1976 (National Oceanic and Atmospheric Administration, National Ocean Service, 2005). A list of tidal benchmarks used to determine elevations appears in *table 2*. Elevations presented in this report are referenced to Mean Lower Low Water (MLLW) for the relevant tidal benchmark stations. MLLW is defined as the average of the lower low water height of each tidal day observed during a tidal epoch. Elevations are calculated from the National Tidal Datum Epoch (1960–78) because corrections to the latest tidal epoch (1983–2001) are not available for all benchmark stations.



Image from U.S. Geological Survey and Air Photo USA, LLC., February 2004

EXPLANATION

- Marsh survey area
- Survey transect line

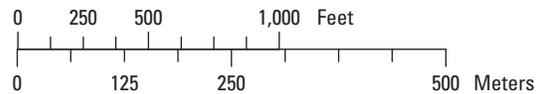


Figure 2. Aerial view of Corkscrew marsh and location of survey transects in South San Francisco Bay, California.

At each site, plant presence or absence and percentage cover for plant species and soil were visually estimated to the nearest five percent within 1-m² quadrats centered along the same transects as the elevation surveys. Plant species noted included *Atriplex patula* L. (variety unknown; common name: Spear oracle), *Jaumea carnosa* Less. (common name: fleshy Jaumea), *Spartina foliosa* Trin. (common name: California cordgrass), *Distichlis spicata* L. (variety unknown; common name: saltgrass), *Limonium californicum* Boiss. (common name: California sea lavender), *Salicornia virginica* L. (common name: pickleweed), *Deschampsia cespitosa* L. (subspecies unknown; common name: tufted hairgrass), *Frankenia salina* Molina (common name: alkali heath), and *Grindelia stricta* DC. (variety unknown; common name: gumplant). The total percentage cover, when all plant species and bare ground

are summed, equals more than 100 percent at some stations because of the additive effect of multiple plant canopies. The presence of vegetation or soil at less than five percent of the quadrat area was noted as “trace” in the field notes and within this report. Typically, data were not collected at stations coincident with waterways, and not all plant species were observed at each site.

Corkscrew Marsh

The initial purpose of this survey was to link plant survey data collected in 1975 to standard tidal benchmarks to accurately determine the location of various plant species with respect to mean high water (MHW). Because of the disturbance of the original survey markers employed in 1975, this

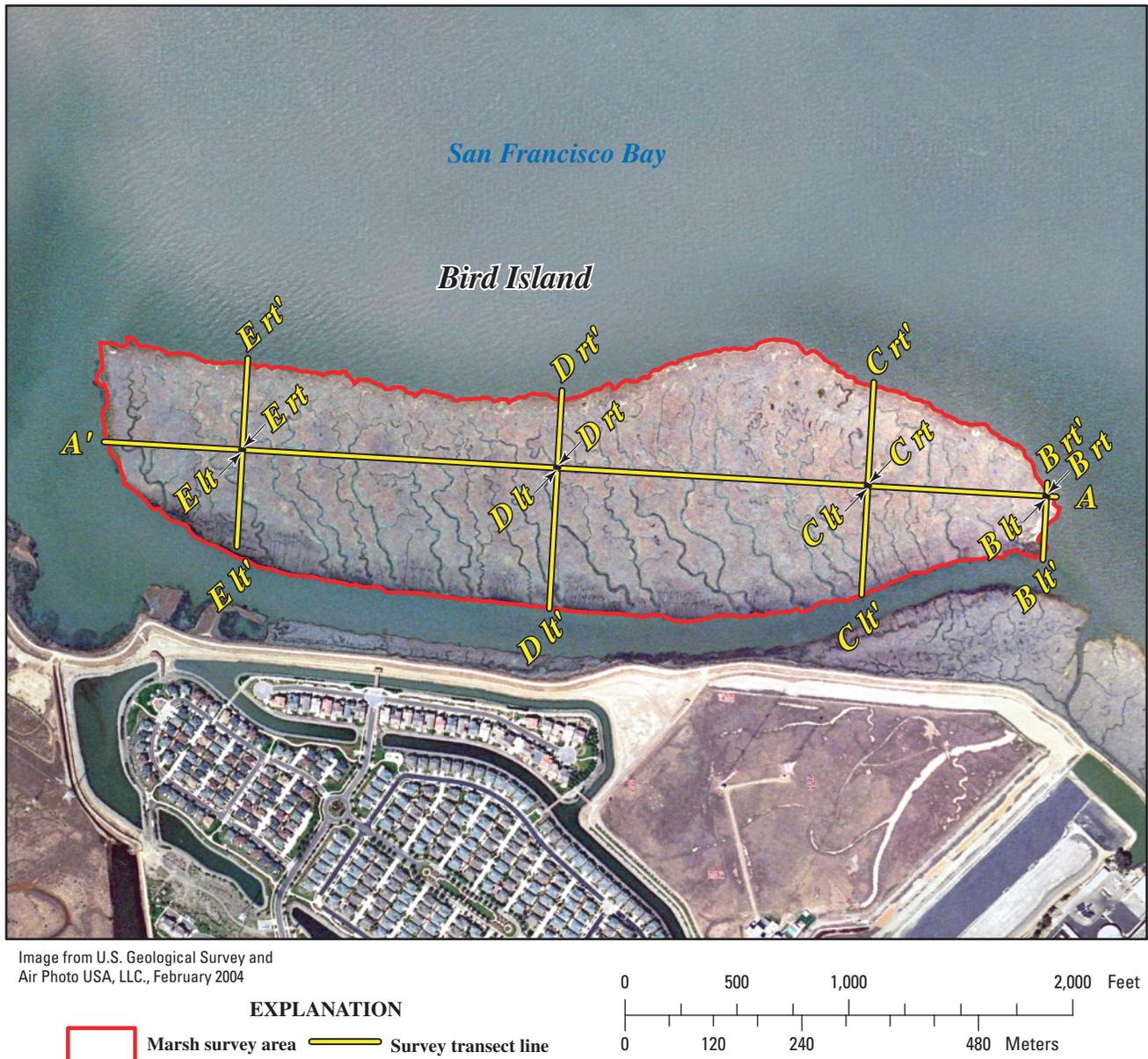


Figure 3. Aerial view of Bird Island marsh site and location of survey transects in South San Francisco Bay, California.

link could not be accomplished. Therefore, a new elevation–vegetation survey was conducted by the California State Lands Commission. This survey was conducted during November 21–22, 1983, over the same general area of marsh surveyed in the 1975 study and consisted of three separate transects (Transects A–C, *fig. 2*). Each transect originated from a separate point located on an elevated dirt roadway at the southern end of the marsh and extended to the bank of Corkscrew Slough. The lengths of each transect and bearing from origination point relative to true north are listed in *table 2*.

Land surface elevations were determined by differential leveling relative to five tidal benchmarks established by the

National Oceanic and Atmospheric Administration (NOAA), National Ocean Service in 1976, as station 941-4505 (National Oceanic and Atmospheric Administration, National Ocean Service, 2005). The locations of individual stations along each transect were chosen in the field on the basis of observed changes in elevation and (or) vegetation patterns. At each station, land surface elevation was determined and the percentage cover of bare ground and plant species was noted for 1-m² quadrats centered along the transect line. Data collected during this survey are presented in *tables 3A–C*.

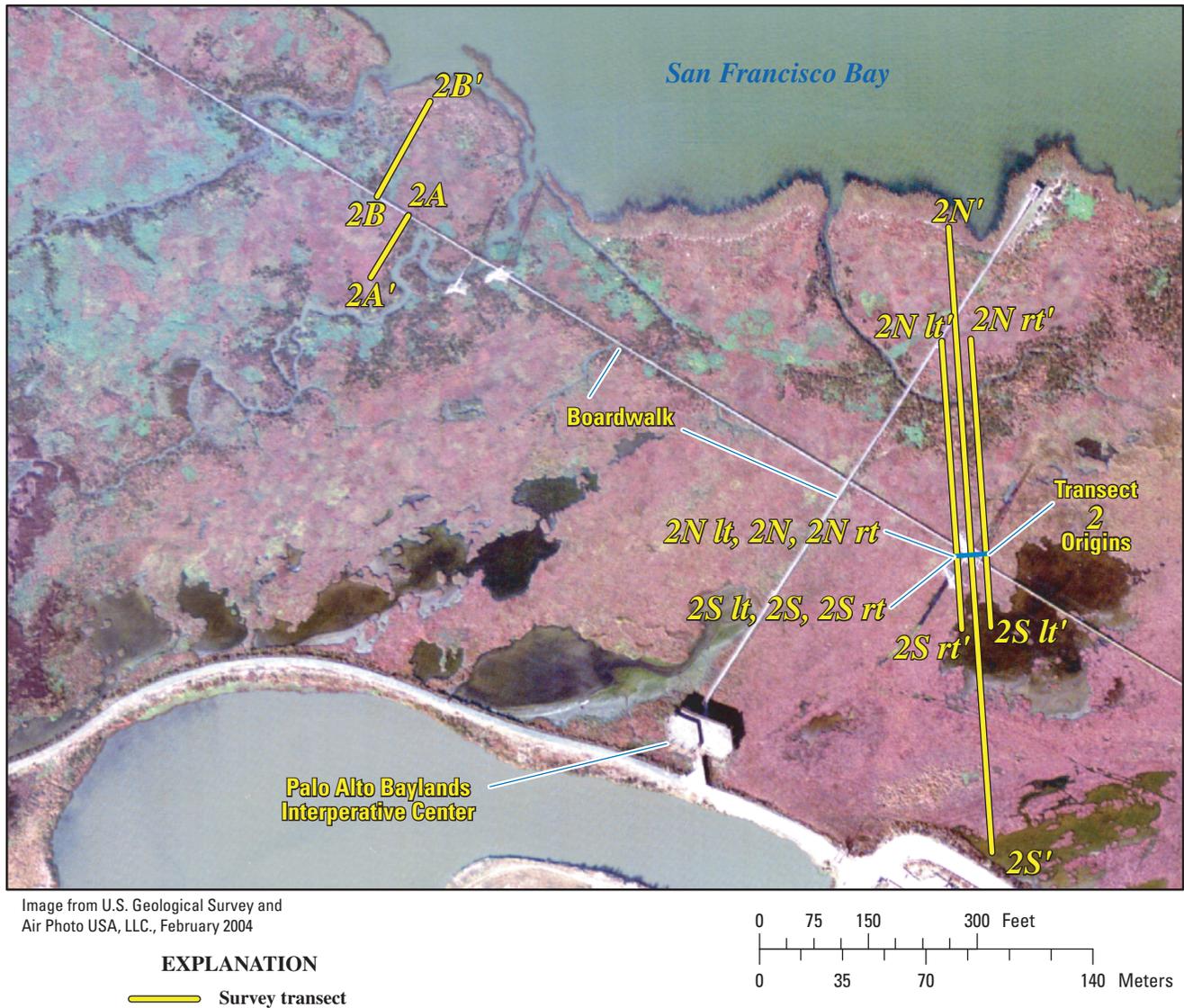


Figure 4. Aerial view of Palo Alto Baylands marsh site and location of survey transects ion South San Francisco Bay, California.

Bird Island

An elevation survey of Bird Island was conducted during August 16–19, 1983, by the California State Lands Commission. The survey consisted of one main transect (A–A′) running east to west across the entire island and four pairs of shorter north and south transects set perpendicular to the main transect (fig. 3 and table 2). Each of the shorter transects began at the intersection with transect A–A′ and extended north or south to the edge of the island. Elevations of stations on the eastern half of transect A and on transects B and C were determined by differential leveling to the five tidal benchmarks of NOAA station 941-4486, whereas four benchmarks of station 941-4486 were used to determine all other elevations.

Plant presence or absence and the percentage cover data for plant species and bare soil were collected during June 11–15, 1984, by Kent G. Dedrick (see Acknowledgements)

and H. Thomas Harvey along the main east–west transect and one of the four pairs of perpendicular transects, and at the same stations where elevation data were previously acquired (tables 4A–I).

Palo Alto Baylands

This survey was conducted on November 16, 1983, and consisted of eight separate transects covering two sections of marsh approximately 280 m apart (fig. 4 and table 2). Six transects were conducted in the eastern portion of the site and consisted of two main north and south transect lines (2N–2N′ and 2S–2S′) with shorter, parallel lines spaced 6.1 m on either side. The area in which these transects were conducted borders a section of reclaimed marsh, which is a former disposal site for dredge spoils from the nearby Palo Alto yacht harbor. We

concluded, after examining historical topographical maps, that dredge spoils were not likely deposited on the area of marsh surveyed; however, this could not be determined definitively.

The western-most surveys conducted at this site consisted of two relatively short transects (2A–2A' and 2B–2B') extending perpendicularly from a boardwalk that traverses the marsh. The area in which these surveys took place is a historical salt marsh. The elevation survey was conducted by California State Lands Commission personnel. Elevations were determined by differential leveling to the four tidal benchmarks of NOAA station 941-4525.

Plant presence or absence and the percentage cover of plant species and bare soil were noted within 1-m² quadrats centered along each transect line at each station. The plant survey was carried out by Dr. H. Thomas Harvey of Harvey & Stanley Associates (formerly of Alviso, California) and the data are presented in *tables 5A–H*.

GIS Data Analysis

Initially, the data presented in this report were in the form of print copies of the original field notes and research summaries produced in 1983 or later. The first step toward preparing the data for publication was to enter the relevant elevation and vegetation survey data into an electronic spreadsheet so that it could be analyzed more efficiently.

We also determined that analysis of the data would benefit from spatial display within a Geographic Information System (GIS). In order to accomplish this, the geographic coordinates of each survey point needed to be calculated from the original survey data. The original survey notes varied greatly in detail for the three survey sites and as such, spatially locating the individual survey points was accomplished through a multistep process.

In this process, the survey notes were first examined for any spatially significant information describing the location of transect starting points such as latitude and longitude coordinates, bearings and distances to established benchmarks, or written descriptions referencing physical landmarks. This information was then used to plot an approximate position for the starting point of each transect line in the GIS. Next, the transect bearing, estimated from information in the survey notes, was combined with the surveyed distances between transect stations to construct each full transect line. The complete transect lines were then overlain on georeferenced, digital, high-resolution aerial photographs from 2004 of each of the survey sites. The location of each station along each transect was then visually evaluated relative to the aerial photographs to determine whether its position was correct and matched any comments contained in the survey notes. Specifically, stations noted as occurring at or near waterways or shorelines were compared with such observable features in the digital photographs. Adjustments were made to the locations of the transect lines until the best possible fit was achieved.

Given the nature of the original survey data, the horizontal locations of individual transect stations are estimated and are not detailed in this report. It is, therefore, unlikely that follow-up surveys will be possible. However, this in no way detracts from the value of the elevation data contained herein. It is evident from the original field notes that these values were determined through rigorous surveying procedures using stable and accurate tidal benchmarks.

The survey transects and individual stations were displayed in the GIS and attributed using the plant abundance data contained in the survey notes. Survey stations were then displayed in the GIS together with the plant attribute data to explore relationships between plant location, abundance, and elevation. All GIS procedures were carried out using the software program ArcGIS 9.0 (ESRI, Redlands, CA). For display purposes, all data were placed in the Universal Transverse Mercator Zone 10 projection and horizontally referenced to the North American Datum of 1983 (NAD83).

Marsh Elevation and Vegetation Survey Results

Marsh Elevations

Marsh surface and tidal channel elevations were collected by the California State Lands Commission in 1983 at a total of 962 stations from three areas of salt marsh located along the southern shore of San Francisco Bay (*tables 3–5*). Plant presence or absence and percentage cover data were collected at 648 of these stations. An examination of these stations shows that marsh surface and tidal channel elevations ranged from 0.98 to 2.94 m, with a median value of 2.18 m, above MLLW.

In a breakdown of the data from each of the sites (Corkscrew marsh, Bird Island, and Palo Alto Baylands), marsh surface and tidal channel elevations for stations with plant cover data ranged from 1.19 to 2.55 m, 0.98 to 2.52 m, and 1.45 to 2.94 m above MLLW at each site, respectively. The median elevation above MLLW recorded at each site was 2.24 m at Corkscrew Slough, 2.04 m at Bird Island, and 2.51 m at Palo Alto Baylands.

Vegetation

The percentage coverage of nine plant species and bare ground was recorded at 648 stations at the three salt marsh sites. *S. foliosa* and *S. virginica* were the most frequently observed species. The total number of observations, elevation ranges, and median elevation values for bare ground and each plant species are presented in *table 6*.

The plants observed, and their abundances, varied to some extent on a site by site basis. At Corkscrew marsh and Bird Island, *S. foliosa* followed by *S. virginica* were the two most frequently observed plants, whereas at Palo Alto Baylands, the order was reversed (*table 6*). *A. patula* was observed only at Palo Alto Baylands, whereas *D. cespitosa* and *L. californicum* were recorded only at Bird Island. Total numbers of observations, elevation ranges, and median elevation values for bare ground and each plant type on a site by site basis are presented in *table 6*.

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TABLES

Table 1. Plant nomenclature.

Plant name as originally appears in field notes	Common plant name	Corresponding proper name
<i>Atriplex patula</i>	Spear oracle	<i>Atriplex patula</i> L.
Cordgrass	Cordgrass	<i>Spartina foliosa</i> Trin.
<i>Deschampsia</i>	Tufted harigrass	<i>Deschampsia cespitosa</i> L.
<i>Frankenia</i>	Alkali heath	<i>Frankenia salina</i> Molina
<i>Grindelia</i>	Gumplant	<i>Grindelia stricta</i> DC.
<i>Jaumea</i>	Fleshy Jaumea	<i>Jaumea carnosus</i> Less.
<i>Limonium</i>	California sea lavender	<i>Limonium californicum</i> Boiss.
Pickleweed	Pickleweed	<i>Salicornia virginica</i> L.
Saltgrass	Saltgrass	<i>Distichlis spicata</i> L.

Table 2. Tidal benchmarks, lengths and bearings of survey transects conducted at Corkscrew marsh, Bird Island, and Palo Alto Baylands, South San Francisco Bay, California.

[Horizontal datum NAD 27; rt, right; lt, left]

	Tidal benchmark identification number	Tidal benchmark reference latitude (degrees/minutes/ seconds)	Tidal benchmark reference longitude (degrees/minutes/ seconds)	Transect length (meters)	Transect bearing from true north (degrees)
Corkscrew marsh					
Transect A	941-4505	37°30'30"	122°12'36"	303.3	346.3
Transect B	941-4505	37°30'30"	122°12'36"	376.5	4.5
Transect C	941-4505	37°30'30"	122°12'36"	237.0	347.5
Bird Island					
Transect A	941-4483	37°33'06"	122°14'36"	1,299.7	273.0
Transect A	941-4486	37°32'42"	122°13'18"	1,288.7	273.0
Transect B rt	941-4483	37°33'06"	122°14'36"	18.6	3.0
Transect B lt	941-4483	37°33'06"	122°14'36"	86.9	183.0
Transect C rt	941-4483	37°33'06"	122°14'36"	141.7	3.0
Transect C lt	941-4483	37°33'06"	122°14'36"	148.7	183.0
Transect D rt	941-4486	37°32'42"	122°13'18"	105.8	3.0
Transect D lt	941-4486	37°32'42"	122°13'18"	192.3	183.0
Transect E rt	941-4486	37°32'42"	122°13'18"	125.0	3.0
Transect E lt	941-4486	37°32'42"	122°13'18"	141.7	183.0
Palo Alto Baylands					
Transect 2N	941-4525	37°27'30"	122°06'18"	138.7	356.0
Transect 2N rt	941-4525	37°27'30"	122°06'18"	91.4	356.0
Transect 2N lt	941-4525	37°27'30"	122°06'18"	91.4	356.0
Transect 2S	941-4525	37°27'30"	122°06'18"	125.0	176.0
Transect 2S rt	941-4525	37°27'30"	122°06'18"	30.5	176.0
Transect 2S lt	941-4525	37°27'30"	122°06'18"	30.5	176.0
Transect 2A	941-4525	37°27'30"	122°06'18"	30.5	211.0
Transect 2B	941-4525	37°27'30"	122°06'18"	45.7	29.0

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Table 3A. Elevations and percentage cover for Transect A–A', Corkscrew marsh, South San Francisco Bay, California.

[Vertical datum is Mean Lower Low Water (MLLW) for tidal benchmark 941-4505 and based on the National Tidal Datum Epoch (1960–78). *Artiplex patula* L., *Deschampsia cespitosa* L., *Grindelia stricta* DC., and *Limonium californicum* Boiss not observed at this site; Trace, < 5 percent cover; nd, no data]

Station	Distance along transect (meters)	Elevation (meters)	Bare ground (percent)	<i>Distichlis spicata</i> L. (percent)	<i>Frankenia salina</i> Molina (percent)	<i>Jaumea carnosa</i> Less. (percent)	<i>Salicornia virginica</i> L. (percent)	<i>Spartina foliosa</i> Trin. (percent)
1	0.00	3.51	nd	nd	nd	nd	nd	nd
2	4.06	2.43	0	0	0	0	100	0
3	8.27	2.12	nd	nd	nd	nd	nd	nd
4	11.17	2.33	0	0	0	0	100	0
5	24.57	2.33	0	0	0	0	100	0
6	24.95	2.14	0	0	0	0	100	0
7	25.28	2.29	nd	nd	nd	nd	nd	nd
8	36.52	2.38	0	0	0	0	100	0
9	43.39	2.29	0	0	0	0	100	0
10	45.91	1.44	nd	nd	nd	nd	nd	nd
11	46.42	2.11	0	0	0	0	100	0
12	48.60	2.31	0	0	0	0	100	5
13	50.48	2.28	nd	nd	nd	nd	nd	nd
14	51.56	1.79	nd	nd	nd	nd	nd	nd
15	52.41	2.22	0	0	0	0	100	5
16	53.16	2.26	0	0	0	0	100	10
17	53.99	1.85	nd	nd	nd	nd	nd	nd
18	54.99	2.19	0	0	0	0	100	15
19	64.99	2.28	0	0	0	0	100	10
20	72.04	2.25	0	0	0	0	90	20
21	73.19	1.98	nd	nd	nd	nd	nd	nd
22	73.59	2.06	0	0	0	100	0	10
23	79.63	2.29	0	0	0	100	0	20
24	83.51	2.19	0	0	0	0	100	15
25	83.80	1.98	nd	nd	nd	nd	nd	nd
26	84.06	2.22	0	0	0	0	90	15
27	86.53	2.29	0	0	0	0	80	20
28	88.84	2.22	0	0	0	0	90	5
29	89.43	2.00	nd	nd	nd	nd	nd	nd
30	90.27	2.18	0	0	0	0	40	60
31	91.26	1.90	nd	nd	nd	nd	nd	nd
32	92.17	2.20	0	0	0	0	40	50
33	93.34	2.00	80	0	0	0	0	20
34	94.31	1.98	nd	nd	nd	nd	nd	nd
35	95.13	2.23	0	0	0	0	70	30
36	103.36	2.35	0	70	0	0	0	10
37	110.88	2.18	0	90	10	0	0	0
38	111.25	1.64	nd	nd	nd	nd	nd	nd
39	112.89	2.18	nd	nd	nd	nd	nd	nd

Table 3A. Elevations and percentage cover for Transect A–A', Corkscrew marsh, South San Francisco Bay, California—Continued.

[Vertical datum is Mean Lower Low Water (MLLW) for tidal benchmark 941-4505 and based on the National Tidal Datum Epoch (1960–78). *Artiplex patula* L., *Deschampsia cespitosa* L., *Grindelia stricta* DC., and *Limonium californicum* Boiss not observed at this site; Trace, < 5 percent cover; nd, no data]

Station	Distance along transect (meters)	Elevation (meters)	Bare ground (percent)	<i>Distichlis spicata</i> L. (percent)	<i>Frankenia salina</i> Molina (percent)	<i>Jaumea carnosa</i> Less. (percent)	<i>Salicornia virginica</i> L. (percent)	<i>Spartina foliosa</i> Trin. (percent)
40	116.92	2.38	0	100	0	0	0	Trace
41	120.83	2.38	0	100	0	0	0	0
42	121.40	1.76	nd	nd	nd	nd	nd	nd
43	123.00	1.52	nd	nd	nd	nd	nd	nd
44	123.28	2.31	0	90	0	10	0	0
45	126.44	2.38	0	90	0	10	0	0
46	129.74	2.40	0	100	0	0	0	0
47	130.13	1.64	nd	nd	nd	nd	nd	nd
48	132.70	1.70	20	0	0	0	0	80
49	133.13	2.12	0	100	0	0	0	20
50	134.27	2.01	20	0	0	0	0	80
51	134.75	2.32	0	80	0	20	0	20
52	140.00	2.30	0	100	0	0	0	15
53	149.79	2.33	0	80	0	0	20	30
54	150.14	1.95	nd	nd	nd	nd	nd	nd
55	150.67	2.31	0	80	0	0	30	20
56	158.26	2.34	0	90	0	0	0	20
57	168.35	2.42	0	30	40	30	0	0
58	168.90	1.74	0	0	0	0	0	100
59	170.43	1.95	0	0	0	0	0	100
60	171.25	0.83	nd	nd	nd	nd	nd	nd
61	172.89	0.92	nd	nd	nd	nd	nd	nd
62	173.52	1.53	0	0	0	0	0	100
63	175.18	2.12	10	90	0	0	0	10
64	176.63	2.32	0	100	0	0	0	Trace
65	185.47	2.35	0	100	0	0	0	10
66	191.75	2.29	0	100	0	0	0	15
67	194.11	1.92	nd	nd	nd	nd	nd	nd
68	195.04	2.15	0	60	0	0	0	30
69	198.27	2.25	10	0	0	0	90	10
70	201.19	2.22	20	0	0	0	80	10
71	202.65	1.84	80	0	0	0	0	20
72	203.23	1.84	80	0	0	0	0	20
73	203.83	2.16	0	0	0	0	100	30
74	206.61	2.28	0	0	0	0	80	20
75	207.28	1.86	nd	nd	nd	nd	nd	nd
76	208.46	1.94	nd	nd	nd	nd	nd	nd
77	209.01	2.20	nd	nd	nd	nd	nd	nd
78	211.70	2.27	0	0	0	0	100	15
79	213.74	2.22	0	0	0	0	80	20
80	214.43	2.03	70	0	0	0	0	30

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Table 3A. Elevations and percentage cover for Transect A–A', Corkscrew marsh, South San Francisco Bay, California—Continued.

[Vertical datum is Mean Lower Low Water (MLLW) for tidal benchmark 941-4505 and based on the National Tidal Datum Epoch (1960–78). *Artiplex patula* L., *Deschampsia cespitosa* L., *Grindelia stricta* DC., and *Limonium californicum* Boiss not observed at this site; Trace, < 5 percent cover; nd, no data]

Station	Distance along transect (meters)	Elevation (meters)	Bare ground (percent)	<i>Distichlis spicata</i> L. (percent)	<i>Frankenia salina</i> Molina (percent)	<i>Jaumea carnosa</i> Less. (percent)	<i>Salicornia virginica</i> L. (percent)	<i>Spartina foliosa</i> Trin. (percent)
81	215.80	2.16	nd	nd	nd	nd	nd	nd
82	220.40	2.27	0	0	0	0	100	10
83	230.36	2.36	0	0	0	0	100	25
84	238.31	2.31	0	70	0	0	30	5
85	244.18	2.23	0	20	0	80	Trace	0
86	244.77	1.13	nd	nd	nd	nd	nd	nd
87	245.44	1.19	nd	nd	nd	nd	nd	nd
88	246.76	2.10	0	80	0	0	0	40
89	249.13	2.24	nd	nd	nd	nd	nd	nd
90	249.96	2.01	nd	nd	nd	nd	nd	nd
91	250.59	2.24	0	90	0	0	0	10
92	260.11	2.33	0	10	0	90	0	Trace
93	265.27	2.28	0	60	0	0	0	35
94	266.49	2.13	0	30	0	0	0	60
95	267.43	2.29	0	80	0	0	0	20
96	274.63	2.32	0	90	0	5	5	0
97	285.06	2.29	0	0	0	90	10	5
98	285.92	1.90	80	0	0	0	0	20
99	286.87	2.26	0	20	0	70	10	10
100	288.45	2.30	0	50	0	30	10	5
101	289.28	1.66	70	0	0	0	0	30
102	289.85	1.70	nd	nd	nd	nd	nd	nd
103	290.75	2.23	nd	nd	nd	nd	nd	nd
104	292.89	2.20	0	0	0	0	80	20
105	296.31	2.16	nd	nd	nd	nd	nd	nd
106	299.64	1.78	0	0	0	0	20	80
107	300.06	0.94	nd	nd	nd	nd	nd	nd
108	303.27	0.56	nd	nd	nd	nd	nd	nd

Table 3B. Elevations and percentage cover for Transect B–B', Corkscrew marsh, South San Francisco Bay, California.

[Vertical datum is Mean Lower Low Water (MLLW) for tidal benchmark 941-4505 and based on the National Tidal Datum Epoch (1960–78). *Artiplex patula* L., *Deschampsia cespitosa* L., *Grindelia stricta* DC., and *Limonium californicum* Boiss not observed at this site; Trace, < 5 percent cover; nd, no data]

Station	Distance along transect (meters)	Elevation (meters)	Bare ground (percent)	<i>Distichlis spicata</i> L. (percent)	<i>Frankenia salina</i> Molina (percent)	<i>Jaumea carnosa</i> Less. (percent)	<i>Salicornia virginica</i> L. (percent)	<i>Spartina foliosa</i> Trin. (percent)
1	0.00	3.47	nd	nd	nd	nd	nd	nd
2	2.31	3.11	nd	nd	nd	nd	nd	nd
3	4.08	2.47	10	0	0	0	90	0
4	5.72	2.30	0	0	0	0	100	0
5	6.22	2.04	0	0	0	0	100	0
6	6.72	2.00	0	0	0	0	100	0
7	6.92	2.35	0	0	0	0	100	0
8	11.26	2.40	0	0	0	0	100	0
9	24.89	2.40	0	0	0	0	100	0
10	36.53	2.41	0	70	0	30	0	0
11	48.70	2.36	0	30	0	30	40	0
12	56.77	2.33	0	25	0	0	75	0
13	59.13	2.23	0	10	0	0	90	0
14	61.65	2.28	0	10	0	0	90	0
15	62.51	2.10	0	0	0	0	100	0
16	63.01	2.26	0	0	0	0	100	0
17	65.73	2.27	0	0	0	0	100	0
18	68.10	2.24	0	0	0	0	100	0
19	68.73	1.97	0	0	0	0	100	0
20	69.78	2.21	0	0	0	0	100	0
21	73.16	2.22	0	0	0	0	100	5
22	73.84	2.06	10	0	0	0	90	10
23	74.68	2.08	10	0	0	0	90	5
24	75.41	2.26	0	0	0	0	100	0
25	76.43	2.24	0	0	0	0	100	10
26	77.61	2.24	0	0	0	0	100	10
27	78.09	2.09	0	0	0	0	100	0
28	78.50	2.20	0	0	0	0	100	0
29	79.83	2.17	0	0	0	0	20	70
30	80.42	2.09	40	0	0	0	30	30
31	81.34	2.23	0	0	0	0	100	0
32	86.24	2.31	0	30	0	0	70	5
33	92.34	2.35	0	60	0	0	40	0
34	96.67	2.30	0	100	0	0	0	0
35	98.53	2.20	0	0	0	0	0	10
36	99.11	1.94	60	0	0	0	0	40
37	100.23	1.93	nd	nd	nd	nd	nd	nd
38	100.53	2.14	0	60	0	0	0	40
39	103.23	2.29	0	90	0	0	5	0
40	106.96	2.24	0	75	0	0	25	0
41	107.74	1.99	80	0	0	0	0	20
42	108.66	2.01	50	0	0	0	0	50
43	109.34	2.24	30	30	0	0	40	40
44	110.58	2.19	nd	nd	nd	nd	nd	nd
45	113.10	2.26	0	75	0	0	20	15
46	119.24	2.35	0	90	0	5	5	0
47	125.33	2.23	10	40	0	0	0	50
48	130.56	2.28	0	70	0	0	10	30
49	136.88	2.33	0	80	0	0	20	0
50	142.36	2.34	0	95	0	0	5	0
51	145.62	2.17	0	80	0	0	0	20

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Table 3B. Elevations and percentage cover for Transect B–B', Corkscrew marsh, South San Francisco Bay, California—Continued.

[Vertical datum is Mean Lower Low Water (MLLW) for tidal benchmark 941-4505 and based on the National Tidal Datum Epoch (1960–78). *Artiplex patula* L., *Deschampsia cespitosa* L., *Grindelia stricta* DC., and *Limonium californicum* Boiss not observed at this site; Trace, < 5 percent cover; nd, no data]

Station	Distance along transect (meters)	Elevation (meters)	Bare ground (percent)	<i>Distichlis spicata</i> L. (percent)	<i>Frankenia salina</i> Molina (percent)	<i>Jaumea carnosa</i> Less. (percent)	<i>Salicornia virginica</i> L. (percent)	<i>Spartina foliosa</i> Trin. (percent)
52	146.39	1.65	0	0	0	0	0	80
53	147.11	1.52	95	0	0	0	0	5
54	147.59	1.26	95	0	0	0	0	5
55	148.01	1.27	nd	nd	nd	nd	nd	nd
56	148.99	2.32	0	100	0	0	0	0
57	153.74	2.32	0	100	0	0	0	5
58	157.52	2.30	5	95	0	5	0	10
59	157.87	1.76	0	90	0	0	10	0
60	158.67	1.85	nd	nd	nd	nd	nd	nd
61	159.11	2.13	0	80	0	0	0	25
62	163.30	2.27	0	80	0	0	0	0
63	166.73	2.21	0	60	0	0	40	0
64	168.74	2.15	0	50	0	10	20	50
65	169.49	1.83	nd	nd	nd	nd	nd	nd
66	171.06	1.88	0	0	0	0	0	30
67	171.63	2.23	0	75	0	0	0	0
68	174.48	2.28	25	75	0	0	0	0
69	175.88	2.25	0	90	0	0	0	7
70	176.14	1.89	0	90	0	0	0	0
71	177.86	1.85	70	0	0	0	0	30
72	178.24	2.13	0	80	0	0	20	10
73	182.93	2.26	0	90	0	0	10	20
74	193.50	2.24	0	100	0	0	0	25
75	202.37	2.31	0	30	0	40	30	0
76	205.25	2.32	0	40	0	55	5	10
77	206.35	2.10	nd	nd	nd	nd	nd	nd
78	206.95	2.28	0	80	0	10	10	20
79	212.77	2.24	0	0	0	40	60	30
80	218.60	2.23	0	0	0	0	80	30
81	219.85	2.12	nd	nd	nd	nd	nd	nd
82	222.41	2.23	0	0	0	0	90	15
83	224.46	2.38	30	0	0	0	70	20
84	224.85	2.10	nd	nd	nd	nd	nd	nd
85	225.82	2.11	50	0	0	0	10	50
86	226.86	2.15	0	0	0	40	50	20
87	228.48	2.21	0	0	0	75	30	25
88	230.63	2.25	0	0	0	0	100	5
89	234.23	2.26	0	0	0	0	80	10
90	237.49	2.24	0	0	0	0	80	5
91	237.89	2.10	nd	nd	nd	nd	nd	nd
92	238.74	2.23	0	0	0	10	90	5
93	245.17	2.22	0	0	0	0	80	30
94	252.55	2.19	0	0	0	0	90	15
95	256.01	2.18	10	0	0	0	75	30
96	256.46	2.01	nd	nd	nd	nd	nd	nd
97	258.12	2.01	50	0	0	0	0	50
98	259.37	2.10	0	0	0	0	90	30
99	262.41	2.15	10	0	0	0	90	30
100	264.20	2.15	0	0	0	0	95	30
101	264.92	1.87	nd	nd	nd	nd	nd	nd

Table 3B. Elevations and percentage cover for Transect B–B', Corkscrew marsh, South San Francisco Bay, California—Continued.

[Vertical datum is Mean Lower Low Water (MLLW) for tidal benchmark 941-4505 and based on the National Tidal Datum Epoch (1960–78). *Artiplex patula* L., *Deschampsia cespitosa* L., *Grindelia stricta* DC., and *Limonium californicum* Boiss not observed at this site; Trace, < 5 percent cover; nd, no data]

Station	Distance along transect (meters)	Elevation (meters)	Bare ground (percent)	<i>Distichlis spicata</i> L. (percent)	<i>Frankenia salina</i> Molina (percent)	<i>Jaumea carnosa</i> Less. (percent)	<i>Salicornia virginica</i> L. (percent)	<i>Spartina foliosa</i> Trin. (percent)
102	267.05	1.86	nd	nd	nd	nd	nd	nd
103	267.34	2.00	nd	nd	nd	nd	nd	nd
104	269.06	2.24	0	0	0	0	70	40
105	280.22	2.30	20	0	0	0	80	20
106	286.46	2.32	0	0	0	0	90	35
107	290.66	2.23	0	0	0	0	90	35
108	291.28	1.74	90	0	0	0	0	10
109	292.14	1.76	90	0	0	0	0	10
110	292.51	2.14	0	80	0	0	20	20
111	297.04	2.25	0	50	0	0	25	25
112	303.63	2.26	0	100	0	0	0	40
113	309.43	2.27	0	100	0	0	0	30
114	312.50	2.28	0	100	0	0	0	0
115	312.98	1.77	nd	nd	nd	nd	nd	nd
116	313.49	1.80	30	0	0	0	0	70
117	314.03	2.20	50	0	0	0	50	20
118	314.91	1.86	90	0	0	0	0	10
119	315.47	1.80	90	0	0	0	0	10
120	315.80	2.09	10	10	0	0	0	80
121	318.29	2.26	0	100	0	0	0	5
122	328.99	2.33	0	40	0	60	5	0
123	335.07	2.31	0	100	0	10	0	0
124	335.56	2.13	nd	nd	nd	nd	nd	nd
125	336.04	2.30	0	60	0	40	0	15
126	341.44	2.30	0	20	0	80	5	0
127	347.52	2.32	0	30	0	0	40	40
128	358.73	2.32	0	100	0	0	5	0
129	362.46	2.24	0	90	0	10	0	5
130	364.64	2.21	0	95	0	5	0	30
131	365.35	2.05	40	40	0	0	0	40
132	366.91	1.98	0	0	0	0	0	60
133	368.47	2.01	15	0	0	0	5	80
134	370.30	1.98	nd	nd	nd	nd	nd	nd
135	372.62	2.08	0	0	0	0	30	40
136	374.25	1.31	95	0	0	0	0	5
137	376.54	0.99	nd	nd	nd	nd	nd	nd

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Table 3C. Elevations and percentage cover for Transect C–C', Corkscrew marsh, South San Francisco Bay, California.

[Vertical datum is Mean Lower Low Water (MLLW) for tidal benchmark 941-4505 and based on the National Tidal Datum Epoch (1960–78). *Artiplex patula* L., *Deschampsia cespitosa* L., *Grindelia stricta* DC., and *Limonium californicum* Boiss not observed at this site; Trace, < 5 percent cover; nd, no data]

Station	Distance along transect (meters)	Elevation (meters)	Bare ground (percent)	<i>Distichlis spicata</i> L. (percent)	<i>Frankenia salina</i> Molina (percent)	<i>Jaumea carnosa</i> Less. (percent)	<i>Salicornia virginica</i> L. (percent)	<i>Spartina foliosa</i> Trin. (percent)
1	0.00	3.63	nd	nd	nd	nd	nd	nd
2	3.86	2.55	0	0	50	0	50	0
3	4.84	2.34	0	0	0	0	100	0
4	16.58	2.33	0	0	0	0	100	0
5	28.47	2.37	0	0	40	0	60	0
6	34.38	2.33	0	0	0	0	100	0
7	34.77	2.22	0	0	0	0	100	0
8	35.68	2.30	0	0	0	0	100	0
9	41.15	2.36	0	0	0	0	100	0
10	44.75	2.26	0	0	0	0	100	0
11	45.56	1.24	nd	nd	nd	nd	nd	nd
12	46.97	2.28	0	60	0	10	30	0
13	49.10	1.46	nd	nd	nd	nd	nd	nd
14	49.83	1.09	nd	nd	nd	nd	nd	nd
15	55.05	1.10	nd	nd	nd	nd	nd	nd
16	56.87	1.43	50	0	0	0	0	50
17	58.74	2.15	20	0	0	0	0	80
18	60.34	2.30	0	100	0	0	0	5
19	63.99	2.31	0	85	0	15	0	0
20	68.65	2.36	0	80	10	10	0	0
21	72.44	2.44	0	80	0	20	0	0
22	74.28	2.27	0	90	0	10	0	10
23	77.80	2.31	0	90	10	0	0	0
24	78.54	1.48	40	0	0	0	0	60
25	79.01	1.53	40	0	0	0	0	60
26	79.63	2.30	0	100	0	0	0	10
27	81.53	2.35	0	80	0	20	0	Trace
28	87.49	2.34	0	80	0	20	0	5
29	94.20	2.39	0	60	0	20	20	0
30	99.53	2.30	0	50	10	40	0	0
31	100.11	2.16	0	50	10	40	0	0
32	101.04	1.13	nd	nd	nd	nd	nd	nd
33	104.59	0.90	nd	nd	nd	nd	nd	nd
34	105.31	1.19	40	0	0	0	0	60
35	105.67	2.18	0	60	0	40	0	0
36	108.80	2.30	0	40	0	20	40	0
37	110.82	2.30	0	50	0	50	0	0
38	111.11	2.08	20	0	0	0	0	80
39	113.65	2.01	0	0	0	0	0	100
40	115.21	1.06	nd	nd	nd	nd	nd	nd
41	116.15	0.88	nd	nd	nd	nd	nd	nd
42	116.92	0.82	nd	nd	nd	nd	nd	nd
43	117.48	1.44	nd	nd	nd	nd	nd	nd
44	117.72	2.21	0	50	Trace	50	0	0
45	125.06	2.30	0	100	0	0	0	10
46	131.05	2.33	0	90	0	0	10	0
47	135.51	2.42	0	50	0	20	30	0
48	138.39	2.45	0	80	0	20	0	0
49	139.02	1.96	20	0	0	0	0	80
50	140.63	1.52	0	0	0	0	0	100

Table 3C. Elevations and percentage cover for Transect C–C', Corkscrew marsh, South San Francisco Bay, California—Continued.

[Vertical datum is Mean Lower Low Water (MLLW) for tidal benchmark 941-4505 and based on the National Tidal Datum Epoch (1960–78). *Artiplex patula* L., *Deschampsia cespitosa* L., *Grindelia stricta* DC., and *Limonium californicum* Boiss not observed at this site; Trace, < 5 percent cover; nd, no data]

Station	Distance along transect (meters)	Elevation (meters)	Bare ground (percent)	<i>Distichlis spicata</i> L. (percent)	<i>Frankenia salina</i> Molina (percent)	<i>Jaumea carnosa</i> Less. (percent)	<i>Salicornia virginica</i> L. (percent)	<i>Spartina foliosa</i> Trin. (percent)
51	141.75	0.74	nd	nd	nd	nd	nd	nd
52	143.92	0.87	nd	nd	nd	nd	nd	nd
53	145.06	1.81	0	0	0	0	0	100
54	146.03	1.90	0	0	0	0	0	100
55	146.34	2.34	0	100	0	0	0	0
56	156.23	2.31	0	70	0	0	30	15
57	168.57	2.28	0	40	0	0	0	60
58	183.92	2.27	20	0	0	0	80	50
59	186.59	2.10	20	0	0	0	30	60
60	187.49	2.26	20	0	0	0	60	50
61	188.78	2.25	30	0	0	0	50	50
62	189.45	2.11	40	0	0	0	20	50
63	189.96	2.25	0	0	0	0	60	50
64	197.57	2.25	0	0	0	10	60	60
65	202.02	2.26	0	100	0	0	0	30
66	202.59	2.14	30	0	0	0	0	40
67	202.92	2.26	0	100	0	0	0	10
68	206.16	2.29	0	80	0	20	0	Trace
69	208.51	2.26	0	100	0	0	0	20
70	209.28	2.05	0	60	0	0	0	40
71	209.49	2.32	0	100	0	0	0	Trace
72	211.41	2.26	0	90	0	10	0	Trace
73	213.24	2.29	0	100	0	0	0	0
74	214.04	1.92	0	0	0	0	0	100
75	214.61	2.31	0	90	0	10	0	0
76	218.85	2.28	0	80	0	20	0	0
77	220.81	2.27	0	70	0	30	0	0
78	221.52	2.13	0	60	0	40	0	0
79	222.06	2.31	0	70	0	30	0	0
80	225.08	2.24	0	80	0	20	0	0
81	226.14	1.98	20	0	0	0	0	80
82	226.90	2.23	0	80	0	20	0	0
83	230.47	2.28	0	100	0	0	0	0
84	230.96	1.95	10	0	0	0	0	90
85	231.30	2.19	0	10	0	90	0	30
86	233.06	2.21	nd	nd	nd	nd	nd	nd
87	234.83	2.05	0	0	0	0	100	50
88	235.88	1.61	10	0	0	0	20	90
89	236.97	0.98	nd	nd	nd	nd	nd	nd

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Table 4A. Elevations and percentage cover for Transect A–A', Bird Island marsh, South San Francisco Bay, California.

[Vertical datum is Mean Lower Low Water (MLLW) for tidal benchmark 941-4483 and 941-4486 and based on the National Tidal Datum Epoch (1960–78). *Atriplex patula* L. not observed at this site; Trace, < 5 percent cover; nd, no data]

Station	Distance along transect (meters)	Elevation (meters)	Bare ground (percent)	<i>Deschampsia cespitosa</i> L. (percent)	<i>Distichlis spicata</i> L. (percent)	<i>Frankenia salina</i> Molina (percent)	<i>Grindelia stricta</i> DC. (percent)	<i>Jaumea carnosa</i> Less. (percent)	<i>Limonium californicum</i> Boiss. (percent)	<i>Salicornia virginica</i> L. (percent)	<i>Spartina foliosa</i> Trin. (percent)
1	0.00	0.79	nd	nd	nd	nd	nd	nd	nd	nd	nd
2	0.61	1.72	nd	nd	nd	nd	nd	nd	nd	nd	nd
3	2.44	1.67	nd	nd	nd	nd	nd	nd	nd	nd	nd
4	3.05	1.97	nd	nd	nd	nd	nd	nd	nd	nd	nd
5	6.71	1.92	0	0	95	0	0	0	0	5	Trace
6	8.53	2.03	nd	nd	nd	nd	nd	nd	nd	nd	nd
7	8.84	2.21	0	75	20	0	0	0	0	5	0
8	10.97	2.30	0	5	70	0	0	0	0	25	0
9	12.50	2.25	0	40	60	0	0	0	0	0	0
10	13.41	2.29	nd	nd	nd	nd	nd	nd	nd	nd	nd
11	16.15	2.24	0	0	100	0	0	0	0	0	0
12	26.21	1.91	0	0	75	0	0	0	0	5	20
13	43.89	1.98	0	0	90	0	0	0	0	10	0
14	48.46	1.83	0	0	40	0	0	0	0	40	20
15	49.07	1.82	nd	nd	nd	nd	nd	nd	nd	nd	nd
16	49.99	1.93	0	0	45	0	0	0	0	45	10
17	55.47	2.03	0	0	90	0	0	0	0	5	5
18	56.39	1.90	nd	nd	nd	nd	nd	nd	nd	nd	nd
19	57.30	2.02	0	5	40	0	0	20	0	35	5
20	74.37	2.05	0	0	0	0	0	30	0	60	10
21	78.64	2.01	5	35	0	0	0	0	0	45	15
22	78.94	1.95	nd	nd	nd	nd	nd	nd	nd	nd	nd
23	79.25	1.82	nd	nd	nd	nd	nd	nd	nd	nd	nd
24	80.16	2.05	5	50	0	0	0	0	0	30	15
25	92.05	1.98	5	25	0	0	0	0	0	30	40
26	92.96	1.58	0	0	0	0	0	0	0	5	95
27	93.57	1.43	0	0	0	0	0	0	0	0	100
28	94.18	1.28	0	0	0	0	0	0	0	0	100
29	94.79	1.02	15	0	0	0	0	0	0	Trace	85
30	96.01	1.17	90	0	0	0	0	0	0	0	10
31	97.54	2.02	0	0	95	0	0	0	0	0	5
32	104.85	2.10	0	0	85	0	0	10	0	Trace	5
33	120.09	2.06	0	0	0	0	0	55	0	30	15
34	131.06	2.01	0	5	0	0	0	60	0	20	15

Table 4A. Elevations and percentage cover for Transect A–A', Bird Island marsh, South San Francisco Bay, California—*Continued*.

[Vertical datum is Mean Lower Low Water (MLLW) for tidal benchmark 941-4483 and 941-4486 and based on the National Tidal Datum Epoch (1960–78).
Atriplex patula L. not observed at this site; Trace, < 5 percent cover; nd, no data]

Station	Distance along transect (meters)	Elevation (meters)	Bare ground (percent)	<i>Deschampsia cespitosa</i> L. (percent)	<i>Distichlis spicata</i> L. (percent)	<i>Frankenia salina</i> Molina (percent)	<i>Grindelia stricta</i> DC. (percent)	<i>Jaumea carnosa</i> Less. (percent)	<i>Limonium californicum</i> Boiss. (percent)	<i>Salicornia virginica</i> L. (percent)	<i>Spartina foliosa</i> Trin. (percent)
105	463.91	2.02	0	0	65	0	0	0	0	20	15
106	470.61	2.03	0	25	30	0	0	30	0	10	5
107	482.80	2.01	nd	nd	nd	nd	nd	nd	nd	nd	nd
108	483.11	1.97	10	0	0	0	0	0	0	0	90
109	485.24	1.41	40	0	0	0	0	0	0	0	60
110	486.16	1.69	50	0	0	0	0	0	0	0	50
111	501.09	2.11	0	0	40	0	0	35	0	25	0
112	505.36	2.06	0	0	10	0	0	65	0	15	10
113	505.97	2.06	nd	nd	nd	nd	nd	nd	nd	nd	nd
114	508.41	0.98	nd	nd	nd	nd	nd	nd	nd	nd	nd
115	511.45	1.05	nd	nd	nd	nd	nd	nd	nd	nd	nd
116	512.06	1.12	70	0	0	0	0	0	0	0	30
117	516.33	2.09	0	0	70	0	0	20	0	10	0
118	531.57	2.07	0	0	65	0	0	0	0	25	10
119	536.75	1.85	5	0	0	0	0	0	0	75	20
120	537.06	1.82	nd	nd	nd	nd	nd	nd	nd	nd	nd
121	538.28	1.65	50	0	0	0	0	0	0	0	50
122	539.50	2.00	nd	nd	nd	nd	nd	nd	nd	nd	nd
123	549.86	2.05	0	0	0	0	0	0	0	80	20
124	555.04	1.97	0	0	0	0	0	40	0	30	30
125	555.65	1.87	nd	nd	nd	nd	nd	nd	nd	nd	nd
126	558.39	1.83	20	0	25	0	0	0	0	25	30
127	559.00	2.04	0	0	50	0	0	0	0	25	25
128	562.05	2.07	0	0	95	0	0	0	0	5	0
129	575.77	2.05	0	0	60	0	0	30	0	10	0
130	576.38	1.29	60	0	0	0	0	0	0	0	40
131	577.60	1.32	30	0	0	0	0	0	0	0	70
132	578.21	1.60	10	0	0	0	0	0	0	0	90
133	592.53	2.10	0	0	0	0	0	0	0	40	60
134	602.89	2.00	0	0	0	0	0	0	0	85	60
135	603.20	1.37	80	0	0	0	0	0	0	0	20
136	604.42	1.26	50	0	0	0	0	0	0	0	50
137	605.03	1.96	0	0	0	0	0	10	0	50	40
138	608.38	1.98	10	10	25	0	0	0	0	25	30
139	613.56	1.93	0	0	65	0	0	0	0	20	15

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Table 4A. Elevations and percentage cover for Transect A–A', Bird Island marsh, South San Francisco Bay, California—Continued.

[Vertical datum is Mean Lower Low Water (MLLW) for tidal benchmark 941-4483 and 941-4486 and based on the National Tidal Datum Epoch (1960–78). *Atriplex patula* L. not observed at this site; Trace, < 5 percent cover; nd, no data]

Station	Distance along transect (meters)	Elevation (meters)	Bare ground (percent)	<i>Deschampsia cespitosa</i> L. (percent)	<i>Distichlis spicata</i> L. (percent)	<i>Frankenia salina</i> Molina (percent)	<i>Grindelia stricta</i> DC. (percent)	<i>Jaumea carnosa</i> Less. (percent)	<i>Limonium californicum</i> Boiss. (percent)	<i>Salicornia virginica</i> L. (percent)	<i>Spartina foliosa</i> Trin. (percent)
140	613.87	1.72	25	0	0	0	0	0	0	15	60
141	614.48	1.82	0	0	0	0	0	30	0	55	15
142	614.78	1.95	nd	nd	nd	nd	nd	nd	nd	nd	nd
143	619.35	2.01	0	0	0	0	0	45	0	25	30
144	619.66	1.95	nd	nd	nd	nd	nd	nd	nd	nd	nd
145	620.27	1.77	nd	nd	nd	nd	nd	nd	nd	nd	nd
146	620.88	1.97	0	0	5	0	0	45	0	25	25
147	623.01	2.08	0	0	75	0	0	5	0	10	10
148	637.03	2.05	0	0	80	0	0	5	0	5	10
149	638.56	1.80	10	0	0	0	0	0	0	35	55
150	640.08	1.98	0	0	0	0	0	0	0	50	50
151	651.05	2.02	5	0	0	0	0	0	0	80	15
152	651.97	1.83	0	0	0	0	0	0	0	75	25
153	652.58	1.55	70	0	0	0	0	0	0	0	30
154	653.49	1.97	20	0	0	0	0	0	0	50	30
155	663.24	2.04	20	0	0	0	0	0	0	45	35
156	663.55	1.89	nd	nd	nd	nd	nd	nd	nd	nd	nd
157	663.85	1.75	40	0	0	0	0	0	0	0	60
158	664.46	1.98	20	0	0	0	0	0	0	40	40
159	671.78	2.13	0	Trace	0	0	0	45	0	55	5
160	680.92	2.13	0	Trace	0	0	0	45	0	45	10
161	684.28	1.35	45	0	0	0	0	0	0	5	50
162	685.50	0.98	70	0	0	0	0	0	0	0	30
163	687.02	1.15	40	0	0	0	0	0	0	0	60
164	688.24	1.88	20	0	0	0	0	0	0	50	30
165	699.21	2.10	0	0	0	0	0	0	0	40	60
166	714.45	2.07	5	0	0	0	0	0	0	65	30
167	730.30	2.06	0	0	0	0	0	0	0	70	30
168	730.91	1.51	30	0	0	0	0	0	0	0	70
169	732.13	0.91	nd	nd	nd	nd	nd	nd	nd	nd	nd
170	732.74	0.98	nd	nd	nd	nd	nd	nd	nd	nd	nd
171	734.57	1.87	30	0	0	0	0	0	0	0	70
172	744.93	2.11	0	0	90	0	0	0	0	0	10
173	757.43	2.06	0	Trace	5	0	0	55	0	15	25
174	758.65	1.90	0	80	0	0	0	0	0	10	10

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Table 4A. Elevations and percentage cover for Transect A–A', Bird Island marsh, South San Francisco Bay, California—Continued.

[Vertical datum is Mean Lower Low Water (MLLW) for tidal benchmark 941-4483 and 941-4486 and based on the National Tidal Datum Epoch (1960–78). *Atriplex patula* L. not observed at this site; Trace, < 5 percent cover; nd, no data]

Station	Distance along transect (meters)	Elevation (meters)	Bare ground (percent)	<i>Deschampsia cespitosa</i> L. (percent)	<i>Distichlis spicata</i> L. (percent)	<i>Frankenia salina</i> Molina (percent)	<i>Grindelia stricta</i> DC. (percent)	<i>Jaumea carnosa</i> Less. (percent)	<i>Limonium californicum</i> Boiss. (percent)	<i>Salicornia virginica</i> L. (percent)	<i>Spartina foliosa</i> Trin. (percent)
210	900.38	1.89	30	0	0	0	0	0	0	0	70
211	900.99	2.04	25	0	0	0	0	0	0	10	65
212	912.57	2.15	0	0	0	0	0	0	0	50	50
213	915.62	2.07	10	0	0	0	0	40	0	30	20
214	918.36	2.16	0	0	0	0	0	50	0	Trace	50
215	927.81	2.20	0	0	0	0	0	0	0	50	50
216	943.05	2.28	5	0	0	0	0	0	0	80	15
217	955.24	2.18	80	0	0	0	0	Trace	0	Trace	20
218	957.99	1.84	30	0	0	0	0	0	0	Trace	70
219	958.29	1.34	30	0	0	0	0	0	0	0	70
220	959.51	1.23	nd	nd	nd	nd	nd	nd	nd	nd	nd
221	959.82	2.12	30	0	0	0	0	30	0	40	0
222	975.06	2.21	0	0	0	0	0	0	0	95	5
223	976.58	2.12	0	0	0	0	0	0	0	90	10
224	976.88	2.03	nd	nd	nd	nd	nd	nd	nd	nd	nd
225	977.80	1.76	nd	nd	nd	nd	nd	nd	nd	nd	nd
226	978.10	1.98	20	0	0	0	0	40	0	10	30
227	988.77	2.18	5	0	0	0	0	0	0	50	45
228	995.48	2.08	0	0	0	0	0	0	0	60	40
229	996.70	2.05	nd	nd	nd	nd	nd	nd	nd	nd	nd
230	998.52	2.01	0	0	Trace	0	0	60	0	10	30
231	998.83	2.13	nd	nd	nd	nd	nd	nd	nd	nd	nd
232	1001.27	2.14	0	0	0	0	0	70	0	15	15
233	1001.88	1.95	nd	nd	nd	nd	nd	nd	nd	nd	nd
234	1002.79	1.98	nd	nd	nd	nd	nd	nd	nd	nd	nd
235	1003.10	2.19	0	0	0	0	0	0	0	40	60
236	1011.63	2.24	0	0	55	0	0	0	0	25	20
237	1019.25	2.27	0	0	50	0	0	50	0	Trace	0
238	1021.99	2.07	0	0	0	0	0	0	0	10	90
239	1022.30	1.96	5	0	0	0	0	0	0	5	90
240	1022.91	1.48	nd	nd	nd	nd	nd	nd	nd	nd	nd
241	1023.52	1.07	nd	nd	nd	nd	nd	nd	nd	nd	nd
242	1024.13	1.18	nd	nd	nd	nd	nd	nd	nd	nd	nd
243	1025.35	2.16	0	0	15	0	0	30	0	20	35
244	1034.49	2.23	0	0	0	0	0	65	0	30	5

Table 4B. Elevations and percentage cover for Transect B rt–B rt', Bird Island marsh, South San Francisco Bay, California.

[Vertical datum is Mean Lower Low Water (MLLW) for tidal benchmark 941-4483 and based on the National Tidal Datum Epoch (1960–78). No plant percentage cover data were collected for this transect]

Station	Distance along transect (meters)	Elevation (meters)
1	6.10	2.12
2	10.36	1.96
3	15.54	1.88
4	18.29	1.78
5	18.59	0.82

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Table 4C. Elevations and percentage cover for Transect B It–B It', Bird Island marsh, South San Francisco Bay, California.

[Vertical datum is Mean Lower Low Water (MLLW) for tidal benchmark 941-4483 and based on the National Tidal Datum Epoch (1960–78). No plant percentage cover data were collected for this transect]

Station	Distance along transect (meters)	Elevation (meters)
1	15.24	2.09
2	30.48	2.10
3	38.71	1.98
4	39.32	1.96
5	40.23	1.71
6	43.89	1.84
7	44.50	1.94
8	49.07	1.91
9	54.86	1.77
10	57.30	1.87
11	60.96	1.94
12	69.49	2.27
13	72.54	1.95
14	75.59	1.58
15	82.91	1.39
16	86.87	1.32

Table 4D. Elevations and percentage cover for Transect C rt–C rt' Rt, Bird Island marsh, South San Francisco Bay, California.

[Vertical datum is Mean Lower Low Water (MLLW) for tidal benchmark 941-4483 and based on the National Tidal Datum Epoch (1960–78). No plant percentage cover data were collected for this transect]

Station	Distance along transect (meters)	Elevation (meters)
1	8.23	2.01
2	8.53	1.51
3	9.14	1.63
4	9.45	1.80
5	11.28	1.96
6	12.80	1.89
7	13.72	1.54
8	14.63	1.57
9	14.94	1.81
10	15.85	1.85
11	16.15	1.73
12	17.07	1.82
13	17.98	2.02
14	19.20	2.05
15	21.03	1.78
16	21.95	1.66
17	22.56	2.00
18	30.48	2.07
19	39.62	2.12
20	48.77	2.08
21	60.96	2.10
22	70.10	2.09
23	79.25	2.09
24	89.31	2.01
25	89.92	1.66
26	90.53	1.98
27	90.83	2.03
28	91.44	2.06
29	100.58	2.14
30	109.73	2.14
31	121.92	2.15
32	131.06	2.23
33	141.43	2.04
34	141.73	1.27

Table 4E. Elevations and percentage cover for Transect C It–C It', Bird Island marsh, South San Francisco Bay, California.

[Vertical datum is Mean Lower Low Water (MLLW) for tidal benchmark 941-4483 and based on the National Tidal Datum Epoch (1960–78). No plant percentage cover data were collected for this transect]

Station	Distance along transect (meters)	Elevation (meters)
1	9.14	2.05
2	12.50	1.99
3	13.41	1.12
4	14.02	1.26
5	16.15	1.85
6	16.46	1.75
7	16.76	1.92
8	24.38	2.03
9	30.48	2.05
10	32.92	1.86
11	33.22	1.81
12	37.49	1.86
13	45.72	2.09
14	54.86	1.87
15	55.17	1.86
16	57.91	1.91
17	58.52	1.87
18	60.96	2.04
19	70.10	2.02
20	79.25	2.09
21	91.44	2.06
22	100.58	1.95
23	100.89	1.76
24	102.41	1.99
25	109.73	2.11
26	116.43	2.00
27	118.26	2.02
28	119.18	1.21
29	122.83	1.51
30	123.75	2.01
31	137.16	1.72
32	144.78	1.61
33	148.74	1.39

Table 4H. Elevations and percentage cover for Transect E rt–E rt’ Rt, Bird Island marsh, South San Francisco Bay, California.

[Vertical datum is Mean Lower Low Water (MLLW) for tidal benchmark 941-4483 and based on the National Tidal Datum Epoch (1960–78). No plant percentage cover data were collected for this transect]

Station	Distance along transect (meters)	Elevation (meters)
1	9.75	2.07
2	10.36	1.28
3	12.50	2.12
4	16.76	2.15
5	21.64	2.12
6	21.95	1.98
7	24.38	2.02
8	25.30	2.08
9	30.48	2.22
10	38.10	2.25
11	46.94	1.59
12	47.24	1.51
13	48.16	2.00
14	48.77	2.13
15	54.86	2.25
16	60.96	2.22
17	62.79	2.22
18	63.09	2.21
19	69.19	1.68
20	69.80	1.72
21	73.15	2.22
22	76.20	2.10
23	76.81	1.82
24	77.42	1.93
25	78.03	2.20
26	85.34	2.26
27	91.44	2.26
28	94.18	2.11
29	95.71	2.11
30	96.01	2.04
31	96.32	1.98
32	96.93	2.16
33	101.50	2.13
34	101.80	2.11
35	102.41	2.10
36	103.02	2.22
37	109.73	2.28
38	117.04	2.19
39	121.92	2.27
40	124.66	2.21
41	124.97	1.56

Table 4I. Elevations and percentage cover for Transect E It–E It', Bird Island marsh, South San Francisco Bay, California.

[Vertical datum is Mean Lower Low Water (MLLW) for tidal benchmark 941-4483 and based on the National Tidal Datum Epoch (1960–78). No plant percentage cover data were collected for this transect]

Station	Distance along transect (meters)	Elevation (meters)
1	9.14	2.29
2	18.29	2.30
3	30.48	2.24
4	39.62	2.27
5	46.02	2.16
6	47.85	2.06
7	48.16	1.65
8	49.99	1.11
9	50.29	2.15
10	60.96	2.25
11	70.10	2.26
12	79.25	2.27
13	91.44	2.21
14	101.80	2.14
15	102.41	2.04
16	103.02	2.09
17	103.63	1.98
18	105.16	2.09
19	105.46	2.05
20	106.98	1.97
21	115.82	1.92
22	121.92	1.88
23	132.59	1.61
24	141.73	1.50

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Table 5B. Elevations and percentage cover for Transect 2N rt–2N rt', Palo Alto Baylands marsh, South San Francisco Bay, California.

[Vertical datum is Mean Lower Low Water (MLLW) for tidal benchmark 941-4525 and based on the National Tidal Datum Epoch (1960–78). *Deschampsia cespitosa* L. and *Limonium californicum* Boiss not observed at this site; Trace, < 5 percent cover; nd, no data]

Station	Distance along transect (meters)	Elevation (meters)	Bare ground (percent)	<i>Atriplex patula</i> L. (percent)	<i>Distichlis spicata</i> L. (percent)	<i>Frankenia salina</i> Molina (percent)	<i>Grindelia stricta</i> DC. (percent)	<i>Jaumea carnosa</i> Less. (percent)	<i>Salicornia virginica</i> L. (percent)	<i>Spartina foliosa</i> Trin. (percent)
1	6.10	2.54	0	0	0	0	0	0	90	10
2	12.19	2.46	0	0	0	0	0	0	100	10
3	18.29	2.45	0	0	0	0	0	0	90	25
4	24.38	2.51	0	0	0	0	0	0	100	Trace
5	30.48	2.49	0	0	0	0	0	0	100	0
6	36.58	2.49	0	0	0	0	0	0	100	0
7	42.67	2.50	0	0	0	0	0	0	100	0
8	48.77	2.45	0	0	0	0	0	0	100	0
9	54.86	2.48	0	0	0	0	0	0	100	0
10	60.96	2.49	0	0	0	0	0	0	100	0
11	67.06	2.50	0	0	0	0	0	0	50	50
12	73.15	2.43	0	0	0	0	0	50	0	50
13	79.25	2.48	0	0	0	0	0	0	50	60
14	85.34	2.49	0	0	0	0	0	0	40	70
15	91.44	2.45	0	0	0	0	0	0	20	100

Table 5C. Elevations and percentage cover for Transect 2N It–2N It', Palo Alto Baylands marsh, South San Francisco Bay, California.

[Vertical datum is Mean Lower Low Water (MLLW) for tidal benchmark 941-4525 and based on the National Tidal Datum Epoch (1960–78). *Deschampsia cespitosa* L. and *Limonium californicum* Boiss not observed at this site; Trace, < 5 percent cover; nd, no data]

Station	Distance along transect (meters)	Elevation (meters)	Bare ground (percent)	<i>Atriplex patula</i> L. (percent)	<i>Distichlis spicata</i> L. (percent)	<i>Frankenia salina</i> Molina (percent)	<i>Grindelia stricta</i> DC. (percent)	<i>Jaumea carnosa</i> Less. (percent)	<i>Salicornia virginica</i> L. (percent)	<i>Spartina foliosa</i> Trin. (percent)
1	6.10	2.50	0	0	0	0	0	0	100	Trace
2	12.19	2.50	0	0	0	0	0	0	100	0
3	18.29	2.47	0	Trace	0	0	0	0	90	10
4	24.38	2.48	0	0	0	0	0	0	90	20
5	30.48	2.48	0	0	0	0	0	0	100	0
6	36.58	2.53	0	0	0	0	0	0	100	0
7	42.67	2.48	0	0	0	0	0	0	100	0
8	48.77	2.47	0	0	0	0	0	0	100	0
9	54.86	2.53	0	0	0	0	0	0	100	0
10	60.96	2.50	10	10	0	0	0	0	80	0
11	67.06	2.37	0	0	0	0	0	0	50	50
12	73.15	2.46	0	0	0	0	0	20	50	80
13	79.25	2.42	0	0	0	0	0	0	40	70
14	85.34	2.44	0	0	0	0	0	30	20	60
15	91.44	2.53	0	0	0	0	10	0	30	90

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Table 5D. Elevations and percentage cover for Transect 2S–2S', Palo Alto Baylands marsh, South San Francisco Bay, California.

[Vertical datum is Mean Lower Low Water (MLLW) for tidal benchmark 941-4525 and based on the National Tidal Datum Epoch (1960–78). *Deschampsia cespitosa* L. and *Limonium californicum* Boiss not observed at this site; Trace, < 5 percent cover; nd, no data]

Station	Distance along transect (meters)	Elevation (meters)	Bare ground (percent)	<i>Atriplex patula</i> L. (percent)	<i>Distichlis spicata</i> L. (percent)	<i>Frankenia salina</i> Molina (percent)	<i>Grindelia stricta</i> DC. (percent)	<i>Jaumea carnosa</i> Less. (percent)	<i>Salicornia virginica</i> L. (percent)	<i>Spartina foliosa</i> Trin. (percent)
1	0.00	2.52	nd	nd	nd	nd	nd	nd	nd	nd
2	6.10	2.51	20	0	0	0	0	0	10	80
3	12.19	2.57	0	0	0	0	0	0	100	40
4	18.29	2.53	0	0	0	0	0	0	100	0
5	24.38	2.51	0	0	0	0	0	0	100	0
6	30.48	2.52	0	0	0	0	0	0	100	0
7	36.58	2.52	0	0	0	0	0	0	100	0
8	42.67	2.53	0	0	0	0	0	0	100	0
9	48.77	2.55	0	0	0	0	0	0	100	0
10	54.86	2.50	0	0	0	0	0	0	100	Trace
11	60.96	2.53	0	0	0	0	0	0	100	Trace
12	67.06	2.55	0	0	0	0	0	0	100	0
13	73.15	2.58	0	0	0	0	0	0	100	0
14	79.25	2.56	0	0	0	0	0	0	100	0
15	85.34	2.64	0	0	0	0	0	0	100	0
16	91.44	2.68	0	10	0	40	0	0	50	0
17	97.54	2.74	0	0	0	100	0	0	0	0
18	103.63	2.65	0	0	0	Trace	0	0	100	0
19	109.73	2.61	0	0	0	0	0	0	100	0
20	115.82	2.58	0	0	0	0	0	0	100	0
21	121.92	2.52	10	0	0	0	0	0	90	0
22	124.97	2.94	0	0	0	0	100	0	0	0

Table 5G. Elevations and percentage cover for Transect 2A–2A', Palo Alto Baylands marsh, South San Francisco Bay, California.

[Vertical datum is Mean Lower Low Water (MLLW) for tidal benchmark 941-4525 and based on the National Tidal Datum Epoch (1960–78). *Deschampsia cespitosa* L. and *Limonium californicum* Boiss not observed at this site; Trace, < 5 percent cover]

Station	Distance along transect (meters)	Elevation (meters)	Bare ground (percent)	<i>Atriplex patula</i> L. (percent)	<i>Distichlis spicata</i> L. (percent)	<i>Frankenia salina</i> Molina (percent)	<i>Grindelia stricta</i> DC. (percent)	<i>Jaumea carnosa</i> Less (percent)	<i>Salicornia virginica</i> L. (percent)	<i>Spartina foliosa</i> Trin. (percent)
1	0.00	2.44	0	0	85	0	0	15	0	10
2	3.05	2.47	0	0	80	0	0	10	10	40
3	6.10	2.44	0	0	0	0	0	80	20	40
4	9.14	2.47	0	0	0	0	0	95	5	40
5	12.19	2.48	0	0	5	0	0	80	15	30
6	15.24	2.49	75	0	10	0	10	Trace	15	50
7	18.29	2.52	20	0	80	0	0	Trace	0	25
8	21.34	2.53	0	0	90	0	0	Trace	10	10
9	24.38	2.49	0	0	0	0	50	0	15	20
10	27.43	2.53	0	0	0	0	0	25	60	40
11	30.48	2.53	0	0	65	0	0	15	20	20

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Table 5H. Elevations and percentage cover for Transect 2B–2B', Palo Alto Baylands marsh, South San Francisco Bay, California.

[Vertical datum is Mean Lower Low Water (MLLW) for tidal benchmark 941-4525 and based on the National Tidal Datum Epoch (1960–78). *Deschampsia cespitosa* L. and *Limonium californicum* Boiss not observed at this site; Trace, < 5 percent cover; nd, no data]

Station	Distance along transect (meters)	Elevation (meters)	Bare ground (percent)	<i>Atriplex patula</i> L. (percent)	<i>Distichlis spicata</i> L. (percent)	<i>Frankenia salina</i> Molina (percent)	<i>Grindelia stricta</i> DC. (percent)	<i>Jaumea carnosa</i> Less. (percent)	<i>Salicornia virginica</i> L. (percent)	<i>Spartina foliosa</i> Trin. (percent)
1	0.00	2.52	10	0	Trace	80	0	10	0	20
2	3.05	2.53	0	0	50	50	0	0	0	10
3	6.10	2.51	10	20	70	5	10	10	5	30
4	9.14	2.54	0	0	Trace	50	0	50	0	15
5	12.19	2.48	5	0	0	25	0	60	10	60
6	15.24	2.51	10	0	25	25	0	40	0	50
7	18.29	2.51	15	0	55	15	0	0	15	70
8	21.34	2.50	10	0	70	20	0	0	0	30
9	24.38	2.52	50	0	10	0	0	35	5	90
10	27.43	2.51	35	0	45	0	0	10	10	80
11	30.48	2.50	0	0	60	0	0	30	10	10
12	33.53	2.57	0	0	80	0	0	15	5	5
13	36.58	2.54	0	0	0	0	0	85	15	50
14	39.62	2.51	75	0	0	0	0	15	10	80
15	42.67	2.52	45	0	30	0	0	25	0	70
16	45.72	2.52	70	0	0	0	0	Trace	30	90

Table 6. Total number of observations, observed range in elevation above MLLW, and median elevation for each plant species, South San Francisco Bay, California.

	Corkscrew marsh		Corkscrew marsh		Corkscrew marsh		Corkscrew marsh		Corkscrew marsh		Corkscrew marsh		Corkscrew marsh		Corkscrew marsh		Corkscrew marsh		Corkscrew marsh			
	observations/ number of stations	elevation range (meters)	median elevation (meters)																			
Bare Ground	57/266	1.19 to 2.47	2.01	128/268	0.98 to 2.28	1.96	21/114	2.48 to 2.64	2.51	206/648	0.98 to 2.64	2.02										
<i>Atriplex patula</i> L.	0/266	NA	NA	0/268	NA	NA	4/114	2.47 to 2.68	2.51	4/648	2.47 to 2.68	2.51										
<i>Deschampsia cespitosa</i> L.	0/266	NA	NA	32/268	1.86 to 2.30	2.08	0/114	NA	NA	32/648	1.86 to 2.30	2.08										
<i>Distichlis spicata</i> L.	124/266	1.76 to 2.45	2.25	82/268	1.82 to 2.52	2.10	23/114	2.44 to 2.68	2.52	229/648	1.76 to 2.68	2.26										
<i>Frankenia salina</i> Molina	9/266	2.16 to 2.55	2.31	2/268	2.41 to 2.52	2.46	12/114	2.48 to 2.74	2.52	23/648	2.16 to 2.74	2.51										
<i>Grindelia stricta</i> DC.	0/266	NA	NA	2/268	2.41 to 2.52	2.46	8/114	2.45 to 2.94	2.50	10/648	2.41 to 2.94	2.50										
<i>Jaumea carnosa</i> Less.	57/266	2.06 to 2.45	2.30	66/268	1.77 to 2.30	2.08	29/114	2.43 to 2.61	2.51	152/648	1.77 to 2.61	2.24										
<i>Limonium californicum</i> Boiss.	0/266	NA	NA	1/268	NA	NA	0/114	NA	NA	1/648	none	2.52										
<i>Salicornia virginica</i> L.	138/266	1.61 to 2.55	2.25	206/268	1.02 to 2.52	2.07	97/114	2.37 to 2.68	2.51	441/648	1.02 to 2.68	2.21										
<i>Spartina foliosa</i> Trin.	175/266	1.19 to 2.38	2.22	246/268	.98 to 2.28	2.03	73/114	1.45 to 2.68	2.50	494/648	0.98 to 2.68	2.12										

[MLLW, Mean Lower Low Water; NA, not applicable]