



General Plan

Volume 1 of 2

*Approved by the State Park and Recreation Commission
May 14, 2004*



The Final General Plan for Tomales Bay State Park is in two volumes.

This is ***Volume 1: The General Plan*** which presents the park's existing conditions, planning influences and issues, plan proposals, the visitor carrying capacity evaluation, the environmental analysis, and appendices.

The other volume, ***Volume 2: Responses to Comments***, contains the comments received during the public review of the General Plan, California State Parks responses to these comments, recommended changes to the General Plan, and CEQA compliance documentation related to this plan.

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GENERAL PLANNING INFORMATION

If you would like more information about the general planning process used by California State Parks or have questions about specific general plans, contact:

General Planning Section
California State Parks
P.O. Box 942896
Sacramento, CA 94296 - 0001



Resolution 2004-14
adopted by the
CALIFORNIA STATE PARK AND RECREATION COMMISSION
at its regular meeting in Santa Rosa
May 14, 2004

Tomales Bay State Park General Plan and Environmental Impact Report

WHEREAS, the Director of the Department of Parks and Recreation has presented to this Commission for approval the proposed General Plan and Environmental Impact Report (“Plan”) for Tomales Bay State Park; and

WHEREAS, the Plan provides conceptual parameters and guidelines for the long-term management, development and operation of Tomales Bay State Park to provide for the future public use and enjoyment of the unit as well as the protection of its quality, resources, and diversity; and

WHEREAS, this Commission is responsible for the approval of the Plan pursuant to California Public Resources Code (PRC) Section 5002.2; and

WHEREAS, the Plan, including related future implementation actions, is subject to the California Environmental Quality Act (CEQA) and that an Environmental Impact Report (EIR) is necessary; and

WHEREAS, pursuant to Public Resources Code Section 5002.2, the Plan includes the EIR as a part of a General Plan, pursuant to the California Code of Regulations (CCR) Section 15166 (CEQA Guidelines), providing discussion of the probable impacts of future development, establishing goals, policies and objectives, and addressing all the requirements of an EIR; and

WHEREAS, the Plan functions as a “tiered EIR” pursuant to PRC 21093, covering general goals and objectives of the Plan, followed by narrower, site-specific CEQA compliance;

WHEREAS, this Commission finds that the Plan, as presented, includes a campground proposal, located in the Heart’s Desire area of the park, that if developed for drive-in camping could result in conditions that would be considered incompatible with the goals and guidelines of the Plan; and

WHEREAS, this Commission further finds that the picnic area proposal for the North Dream Farm site, if developed, could create undesirable traffic and resource impacts.

Continued on page two

Continued from page one:

Resolution 2004-12 adopted by the
CALIFORNIA STATE PARK AND RECREATION COMMISSION
at its regular meeting in Santa Rosa May 14, 2004

NOW, THEREFORE, BE IT RESOLVED

RESOLVED: this Commission makes the following changes to the Plan in order to clarify the intent to provide walk-in rather than drive-in camping, by revising Guideline HD-8 on page 165 to read as follows:

“Develop Small Campground above the Entrance Station The current park maintenance storage area (the “boneyard” site) may be considered for development of an approximately 15-site (maximum) walk-in campground provided, however, that accommodation may be made for vehicles to provide any necessary disability access. The campground could include a campground host site, and a small campfire center. The design and operation of this campground is intended for tent camping, with low impact uses that are compatible with the aesthetic qualities of the Heart’s Desire Area. This campground would help address the local deficit of this kind of public camping experience in the West Marin area.”

RESOLVED: this Commission hereby deletes the North Dream Farm picnic area proposal in the Plan and deletes guideline INV-3 on page 167; and

RESOLVED: this Commission has reviewed and considered the information and analysis in the Plan prior to approving the Plan, and this Commission finds and certifies that the Plan reflects the independent judgment and analysis of this Commission and has been completed in accordance with the California Environmental Quality Act; and be it

RESOLVED: in connection with its review of the Plan prior to approving the General Plan, this Commission independently finds that the environmental conclusions contained in the Environmental Analysis Section of the Plan are supported by facts therein and that each fact in support of the findings is true and is based on substantial evidence in the record and that mitigation measures or other changes or alterations have been incorporated into the Plan which will avoid or substantially lessen the potential impacts identified in the Plan; and be it

RESOLVED: in connection with its review of the Plan prior to approval of the Plan, this Commission finds the mitigation measures incorporated in the Environmental Analysis Section of the Plan, together with the resource protection policy guidelines in the Plan, to be feasible and appropriate mitigation of the potential environmental impacts identified in the Plan and adopts them as part of its approval of the Plan consistent with PRC Section 21081.6(b); and be it

Continued on page three

Continued from page two:

Resolution 2004-12 adopted by the
CALIFORNIA STATE PARK AND RECREATION COMMISSION
at its regular meeting in Santa Rosa May 14, 2004

RESOLVED: The location and custodian of the Plan and other materials which constitute the record of proceeding on which the Commission's decision is based is: State Park and Recreation Commission, P.O. Box 942896, Sacramento, California 94296-0001, Phone 916/653-0524, Facsimile 916/653-4458; and be it

RESOLVED: The California State Park and Recreation Commission hereby approves the Department of Parks and Recreation's Tomales Bay State Park General Plan and Environmental Impact Report, dated February 2004, subject to the changes stated above; and be it

FURTHER RESOLVED; that a Notice of Determination be filed with the Office of Planning and Research within five days of this approval;

Attest: This Resolution was duly adopted by the California State Park and Recreation Commission on May 14, 2004, at its duly noticed public meeting at Santa Rosa, California.

By: ORIGINAL SIGNED BY

Date: 7-16-04

Louis Nastro

Assistant to the Commission

For Ruth Coleman, Director

California Department of Parks and Recreation

Secretary to the Commission



General Plan & EIR Volume 1 of 2

Approved May 14, 2004



Arnold Schwarzenegger
Governor

Mike Chrisman
Secretary for Resources

Ruth Coleman
Director of California State Parks

State of California
The Resources Agency

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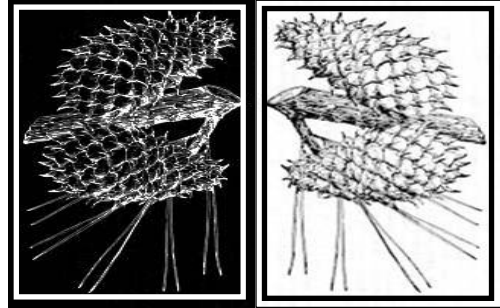
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EXECUTIVE SUMMARY

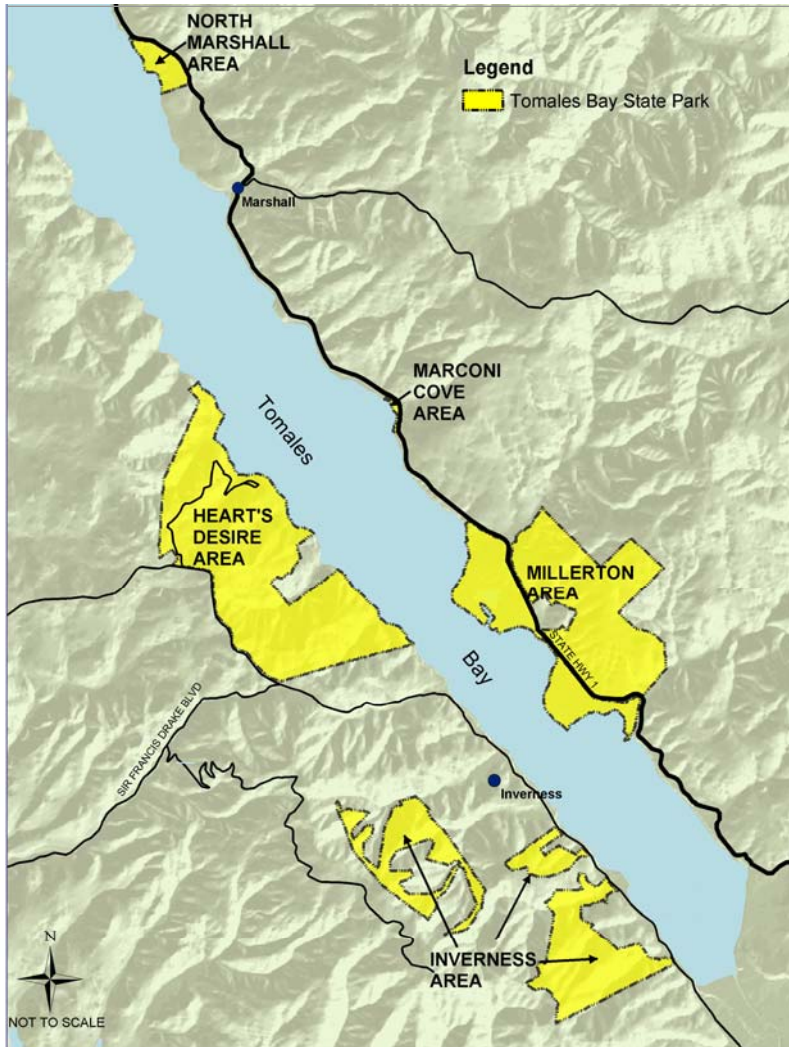


LOCATION AND PARK AREAS

Tomales Bay State Park is located 40 miles north of San Francisco in Marin County, adjacent to Point Reyes National Seashore and near the communities of Inverness, Point Reyes Station, and Marshall. The park is comprised of seven separate land parcels located on the west and east shores of Tomales Bay. This plan groups these parcels into five distinct planning areas. The west shore areas include the Heart's Desire Area and the Inverness Area, and the east shore areas include the Millerton Area, the Marconi Cove Area, and the North Marshall Area.

The 2,000-acre park features four gently sloping, surf-free beaches on the west side of the bay, steep forested slopes on the Inverness Ridge, and bayshore and upland properties along Highway 1. To date, park recreational facilities and opportunities are limited to the Heart's Desire and Millerton Areas.

Tomales Bay State Park Planning Areas



PURPOSE OF PARK ACQUISITION

In the 1940s real estate developers began to purchase bayfront land in Marin County, prompting local residents and conservation groups to save this area as a park and preserving public access to its beaches. On November 8, 1952, Tomales Bay State Park was formally dedicated and opened to the public. The park originally consisted of the beaches and forests of the Heart's Desire Area.

PUBLIC INVOLVEMENT

Public input for this general plan was gathered and stakeholders were informed and involved in a number of ways, including a planning website, a public scoping meeting, a park visitor survey, and a newsletter. Public involvement efforts included a public meeting to review the plan proposals contained in the Preliminary General Plan / Draft EIR during the California Environmental Quality Act (CEQA) review process and a concluding State Parks Commission Hearing. Coordination meetings were held with the Tomales Bay Watershed Council, Point Reyes National Seashore, and Marin County concerning their on-going planning efforts.

Public input for this general plan was gathered and stakeholders were informed and involved in a number of ways, including a planning website, a public scoping meeting, a park visitor survey, and a newsletter

PRINCIPAL PLANNING OBJECTIVES AND KEY CONCEPTS

The following summaries highlight the important regional and parkwide planning objectives that are addressed by this plan. Key plan concepts for achieving these objectives follow each park issue summary, which are fully described in the Planning Influences and Issues Section.

Regional Planning, Interagency Coordination, and Community Relations

Regional objectives such as improved water quality, recreation and education planning, and resource and aesthetic preservation cannot be achieved simply at the park level. Accordingly, this general plan evaluates the issues and opportunities of Tomales Bay State Park in its regional and community perspective.

KEY CONCEPTS:

- Enhance interagency coordination concerning the regional acquisition and management of ecological, biological, recreational, cultural, aesthetic, and educational resources to create a more efficient, effective, cooperative, and holistic resource and recreation vision.
- Maintain and enhance positive relations and communications between State Parks and neighboring communities, landowners, and land-managing agencies towards meeting common goals, including security, safety, aesthetic and resource protection,

and recreational opportunity.

Park Connectivity

Tomales Bay State Park is currently comprised of seven disconnected land parcels. An important objective of this plan is to coordinate the planned uses of these parcels so they can, as much as possible, function as a whole despite their physical separation.

KEY CONCEPTS:

- Support the goals of the California Coastal Trail Plan by encouraging new north-south trails in the park and connections between park trails and surrounding public trail systems and recreation areas.
- Improve short-term “rest-stop” recreational, orientation, and interpretive opportunities for Highway 1 travelers.

Water Quality, Erosion, and Estuaries

The Regional Water Quality Control Board (RWQCB) has designated Tomales Bay as an impaired watershed. This plan’s objective is to improve the quality of the park’s stream, estuary, and adjacent bay waters and to reduce erosion and heal erosion scars.

KEY CONCEPT:

- Promote healthy watershed processes and high quality waters in the park and in the Tomales Bay Watershed in cooperation with other agencies and the local community.

Sensitive Species, Biocorridors, and Habitats

The park is currently a refuge for a number of sensitive plant and animal species of terrestrial, estuarine, intertidal, and marine environments. The plan’s objective is to enhance these habitats and biocorridors, restore sensitive plant and animal populations, and protect these and other less sensitive species.

KEY CONCEPTS:

- Protect and, where appropriate, restore aquatic and terrestrial sensitive plant and animal habitats and species within the park.
- Preserve, rehabilitate and, as appropriate, establish new habitat linkages between the park and surrounding protected lands.
- Eradicate or control invasive exotic plant species in the park.

Vegetation and Fire Management

The plan’s objective is to help restore native plant communities and natural vegetation processes, improve recreational and aesthetic values, and reduce wildfire danger.

KEY CONCEPTS:

- Manage for the enhancement and perpetuation of native plant species diversity and the biological integrity of native plant communities.
- Restore the role of fire in the natural ecological processes of the park.

Recent Acquisitions, Recreational Demand, and Visitor Facilities

One of the major objectives for this general plan is to accommodate and respond to an expected rise in recreational demand in West Marin with new recreation facilities, while at the same time providing adequate protection for sensitive natural, cultural and

aesthetic resources.

The plan addresses the adequacy and possible improvement or addition of recreational facilities such as trails, scenic wayside pullouts, group and individual picnic areas, interpretive exhibits, boat ramps, campgrounds, and restrooms. The plan considers improvements to park entrances, traffic and pedestrian circulation, and parking as well as visitor services and concessions. Recent acquisitions of ranchlands above Millerton Point, a former marina site at Marconi Cove, and coastal property north of Marshall are evaluated in the plan for their recreational and preservation potentials and recommendations are made for future use and management.

Improve recreational opportunities along the Highway 1 corridor where recent acquisitions present new opportunities

KEY CONCEPTS:

- Focus and anchor east shore recreation at Marconi Cove and west shore recreation at Heart's Desire Area.
- Manage the greater part of park areas for their habitat, watershed, and aesthetic values and for low-impact and low-density recreation opportunities such as trail use, nature observation, and picnicking.
- Enhance trail connections with Point Reyes National Seashore in the Heart's Desire and Inverness Areas.
- Improve recreational opportunities along the Highway 1 corridor where recent acquisitions present new opportunities.
- Formalize small-scale camping opportunities in previously developed areas.
- Watercraft and sailboard launching opportunities will be provided at Marconi Cove and hiking and mountain biking recreational opportunities will be provided at the proposed trail in the Millerton Uplands.
- Use sustainable design in the siting, construction, and maintenance of park facilities.

Visitor Safety and Natural Hazards

The plan's objective is to improve visitor safety regarding potential hazards such as wildfire, landslides, and earthquakes.

KEY CONCEPTS:

- Provide for public safety and prevent structural failures due to seismic activity, landslides, flooding, and erosion.
- Anticipate wildfires and plan strategies to preserve sensitive park resources, ensure human safety, and protect property.

Park Operations

The plan's objective is to improve employee housing, administration, and park maintenance facilities. The current park maintenance facility in the Heart's Desire Area is considerably distant from the park's land parcels on the east side of Tomales Bay.

KEY CONCEPTS:

- Provide needed and appropriate services and facilities for park security, resource protection, visitor access and services, public health and safety, park administration,

maintenance, and staff housing in the most efficient, effective, and environmentally-sensitive way.

Aesthetics and Viewshed

The plan’s objective is to improve protection and management of the park’s aesthetic resources and maintain the area’s unique spirit of place.

KEY CONCEPTS:

- Identify and preserve the distinctive aesthetic qualities that help give Tomales Bay State Park its unique “spirit of place.”
- Scale and site new recreational development to harmonize with the landscape.

Scale and site new recreational development to harmonize with the landscape

Cultural Resources Management

The plan’s objective is to improve protection and management of the park’s archaeological and historic resources.

KEY CONCEPT:

- Provide an appropriate level of protection, stabilization, preservation, and interpretation of the park’s cultural resources, focusing on areas of archaeological and historical importance.

Interpretation and Education

The plan’s objective is to expand the park’s interpretive and educational programs and facilities to keep pace with expanded recreational opportunities and facilities.

KEY CONCEPT:

- Increase visitor understanding, appreciation, and enjoyment of the natural, cultural, aesthetic and recreational resources of the park.

PLAN PROPOSALS

The above outlined park issues are addressed in the plan’s proposals for park resource and recreational enhancements that form the heart of this general plan. The *Goals and Guidelines* section delineates the plan’s proposals for managing the park’s natural, cultural and aesthetic resources, for interpreting these resources, for providing recreational facilities and opportunities, and for operating and maintaining the park. The plan also addresses visitor experience at the park and presents a method for monitoring future visitor experiences and park resource values to ensure that both continue to reflect the vision and goals of the General Plan.

The general plan has two overall approaches that set the tone for the plan’s proposals:

“ A LIGHT TOUCH FOR A SENSITIVE AREA ” &

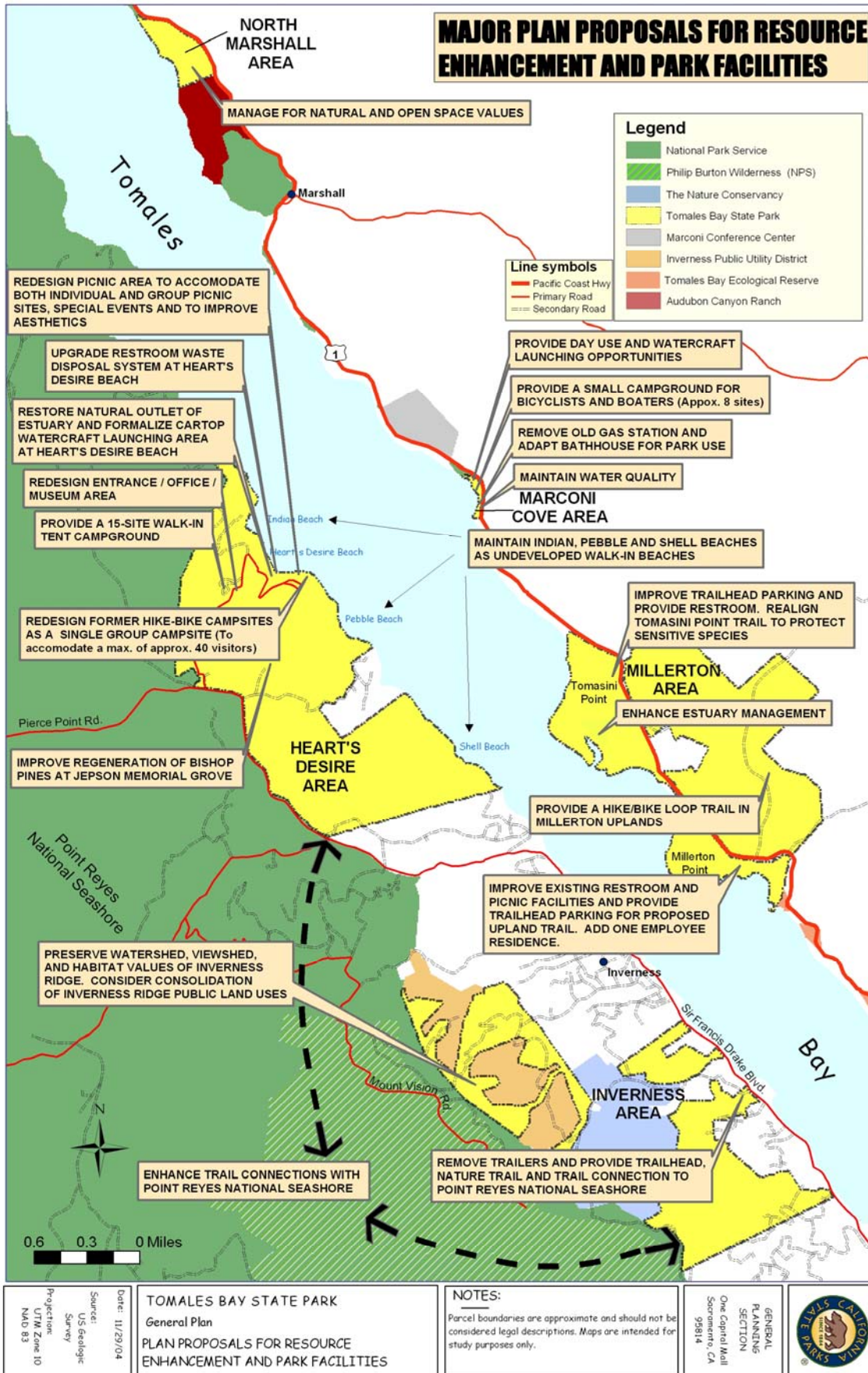
“ ENCOURAGING CONNECTIONS AND COMMUNICATION ”

The general plan has two overall approaches that set the tone for the plan’s proposals.

The first is: “*A LIGHT TOUCH FOR A SENSITIVE AREA.*” The plan aims to preserve what works well now in the park and only recommends changes to park management, activities, and recreational and administrative facilities that can harmonize with the area’s sensitive values and support valuable visitor experiences of Tomales Bay and its surrounding landscape.

The second approach is: “*ENCOURAGING CONNECTIONS AND COMMUNICATION.*” The plan promotes connectivity and communication with surrounding areas, communities, and influences through well-planned facilities, biocorridors, watershed management, community relations, interpretation, volunteer opportunities, regional planning, and fire management.

The following map and tables summarize the major proposals presented in this plan.

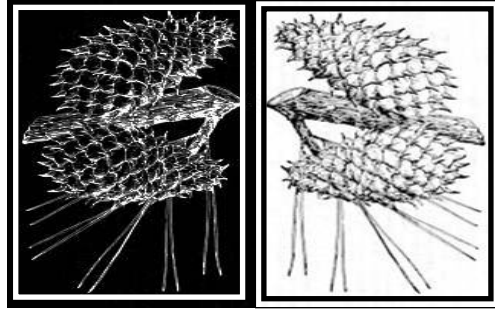


EXISTING FACILITY CONDITIONS AND PROPOSED FACILITY CHANGES		
AREA	EXISTING CONDITION	PROPOSED CHANGE
HEART'S DESIRE AREA		
▪ Ranger Office	No ADA access, Limited public access, Inefficient site layout	ADA upgrades, Add Miwok exhibits, improve site layout
▪ Maintenance Facility	Adequate to support park locations west of Bay	No Change
▪ Outdoor Storage Area "Bone Yard"	Infrequently used operational storage	Convert to 15 site walk-in tent campground
▪ Park Residences	2 residences	No Change
▪ Picnic Area	Limited group access, Inefficient layout	Provide group sites, redesign layout
▪ Heart's Desire Beach	Drive-up beach access	No Change
▪ Indian Beach	Walk-in beach access	No Change
▪ Pebble Beach	Walk-in beach access	No Change
▪ Shell Beach 1&2	Walk-in beach access	No Change
▪ Hike/Bike Campground (CG)	Not in use	Convert to group CG
▪ Cartop Watercraft Launch Area	Portion of beach designated for launching	Provide designated unloading area and access route
▪ Jepson Trail	1.1 miles long	No Change
▪ Johnstone Trail	4 miles long	No Change
▪ Indian Beach Trail	.5 miles long, interpretive panels	No Change
▪ Trail Connections to Point Reyes N.S.	None	Two connections
INVERNESS AREA		
▪ Park Residence	Unmaintained	Possibly remove
▪ 2 Trailers (not in use)	Unmaintained	Remove
▪ Trailhead/Nature Trail at N. Dream Farm	None	Provide
▪ Trail Connection to Point Reyes N.S.	None	Provide
MILLERTON AREA		
Park Residence	1 residence	Possibly add 1 residence
Millerton Parking Area	Pit toilet, no running water	Improve restroom
Tomasini Point Parking Area	2 space parallel parking	Add restroom, improve parking
Upland Hike/Bike Trail	None	Provide
MARCONI COVE AREA		
▪ Gas Station	Unmaintained	Remove
▪ Former Bathhouse	Unmaintained	Adaptive reuse
▪ Day Use Area (picnicking, boat launching)	None	Provide
▪ Walk-In Campsites	None	Add approx. 8 campsites
NORTH MARSHALL		
▪ Facilities	None	Consider providing trail segment to CA Coastal Trail

MAJOR NON-FACILITY GUIDELINES

AREA	RECOMMENDED ACTIONS
HEART'S DESIRE AREA	
<ul style="list-style-type: none"> ■ Heart's Desire Parking Area 	Restore natural outlet of estuary (no reduction in parking).
<ul style="list-style-type: none"> ■ Jepson Grove (Bishop Pines) 	Enhance Bishop Pine regeneration
<ul style="list-style-type: none"> ■ Area Beaches 	Heart's Desire Beach to remain only drive-up beach Access. Indian, Pebble and Shell Beaches to remain walk-In only beaches.
<ul style="list-style-type: none"> ■ Pierce Point Rd. Security Gate 	Continue to control park access from this gate.
INVERNESS AREA	
<ul style="list-style-type: none"> ■ Entire Area, except for Dream Farm Property 	Leave undeveloped for watershed, viewshed and habitat values.
<ul style="list-style-type: none"> ■ Entire Area 	Consider acquisitions, land exchanges and land use agreements to consolidate or exchange discontinuous parcels.
MILLERTON AREA	
<ul style="list-style-type: none"> ■ Tomasini Point 	Enhance estuary management
MARCONI COVE AREA	
<ul style="list-style-type: none"> ■ Southern Portion of Area 	Maintain in a natural condition
NORTH MARSHALL AREA	
<ul style="list-style-type: none"> ■ Entire Area 	Preserve natural resources and open space character of area
<ul style="list-style-type: none"> ■ Entire Area 	Consider land exchanges, memorandums of understanding, and other agreements with surrounding agencies, which would improve management and protection of the area.

INTRODUCTION



LOCATION AND PARK AREAS

Tomales Bay State Park is 40 miles north of San Francisco in Marin County, adjacent to Point Reyes National Seashore and near the communities of Inverness and Point Reyes Station. The park is comprised of seven separate land parcels located on the west and east shores of Tomales Bay. This plan groups these parcels into five distinct planning areas. The west shore areas include (from north to south) the Heart's Desire Area and the Inverness Area (comprising three parcels). The east shore areas include (from south to north) the Millerton Area, the Marconi Cove Area, and the North Marshall Area.

The 2,000-acre park features four gently sloping, surf-free beaches on the west side of the bay, protected from winds by the Inverness Ridge, the backbone of the Point Reyes Peninsula. To date, the only developed recreational opportunities lie within the Heart's Desire and the Millerton Areas.

Tomales Bay sits in a long bowl-shaped valley created by the San Andreas Fault. The lands surrounding the bay sweep up to the Inverness Ridge on the west and to rolling hilltops on the east. The properties surrounding the scattered areas of the park are used for a variety of purposes by various owners.

WEST SHORE PARK AREAS

The heavily forested west shore of Tomales Bay is bordered along the southern end of the bay by Sir Francis Drake Boulevard and includes the communities of Inverness Park and Inverness. Inverness Ridge and Tomales Point loom over the west shore of the bay.

HEART'S DESIRE AREA

The Heart's Desire Area is the original acquisition and includes the park's four popular quiet-water beaches as well as the Jepson Memorial Grove of Bishop pines. The Heart's Desire Area is bounded on the north and west by the National Park Service's Point Reyes National Seashore. A large private in-holding with residences and a beach called "Shallow Beach" lies within this area. On the south side of the park are primarily private lands, residential properties, and watershed lands extending south and past the community of Inverness. Inverness lies approximately one mile south of the southern boundary of this area.

INVERNESS AREA

The Inverness area consists of three large discontinuous parcels along the west side of Tomales Bay, east of the ridgeline above the community of Inverness.

The northwest parcel is a complexly-shaped property along the east side of the Inverness Ridge abutting Point Reyes National Seashore. The Philip Burton Wilderness

Reserve within the National Seashore begins very close to this border and extends almost a mile to the west. Embedded within and on the periphery of this state park parcel are watershed lands owned by the Inverness Public Utility District. To the east of this parcel the land slopes down to Sir Frances Drake Boulevard with a scattering of private and commercial ownerships in the unincorporated town of Inverness. To the south of this property is a large parcel owned by The Nature Conservancy, used primarily as watershed land. On the north end of this Conservancy parcel are a few small private in holdings.

The northeast parcel's east boundary touches Sir Francis Drake Boulevard in two places and extends almost halfway to the top of the Inverness Ridge. This parcel is surrounded by private and watershed lands. The town of Inverness is just north of this parcel.

The southeast parcel descends steeply from the Inverness Ridge down to Sir Frances Drake Boulevard. The property extends to the boulevard in two points separated by private forested land. Across a narrow inlet in the bay sits the Tomales Bay Ecological Reserve, a large parcel at the south end of the bay owned and managed for natural resource values by The California Department of Fish and Game. The land south of this park parcel is primarily in private ownership, with the community of Inverness Park located approximately one mile from the southernmost end of the park property.

EAST SHORE PARK AREAS

The east shore of Tomales Bay is accessed by scenic Highway 1. Three park areas occur along this corridor: Millerton Area, the Marconi Cove Area, and the North Marshall Area. Several oyster companies own portions of the shore and lease bay bottom parcels from the California Department of Fish and Game for their operations. Grazing lands dominate the largely treeless slopes that rise up from the bay.

MILLERTON AREA

The Millerton Area includes some recent acquisitions and has a day-use parking lot, a small picnic area, a pit toilet, and a popular loop trail. Highway 1 bisects this area in a northwest/southeast direction, splitting the parcel into two shoreline "points" (Millerton Point and Tomasini Point) and the upland area. Private dairy and sheep ranching lands lie to the north, east, and south of this area with the bay defining the western park boundary. The Tomales Bay Oyster Company owns the shoreline between Millerton and Tomasini Points and leases the bottom of the bay off that parcel. An area of private land lies in the center of the park's property, east of the highway.

The Hog Island Oyster Company, based north of the community of Marshall, leases a bay bottom parcel off the northern end of Tomasini Point. Adjacent to the south end of this area, the California Department of Fish and Game owns a strip of land along the bay.

MAP 1: REGIONAL MAP

MAP 2: PARK LOCATION AND PLANNING AREAS

MARCONI COVE AREA

This former marina site is a recent acquisition with good water-oriented access and recreation potential. An oyster company leases a portion of the bottom of the bay off the southern end of Marconi Cove from the Department of Fish and Game. To the immediate north of the Marconi Cove Area is a small privately-owned beach property and beyond that lies a small holding of the National Park Service's Golden Gate National Recreation Area (GGNRA). The Marconi Conference Center State Historic Park is located north of this GGNRA property, on 62 acres owned and operated by the Department as a non-profit conference facility. Highway 1 is adjacent to the Marconi Cove Area on its eastern side and private grazing lands are east of the highway.

NORTH MARSHALL AREA

This area is a relatively small, recent acquisition that constitutes the northernmost parcel in the park. Like the Marconi Cove area, this parcel is bounded by Highway 1 on the east, with private grazing and dairy lands to the east of the highway. To the west is Tomales Bay. South of the area lies the Audubon Canyon Ranch's Cypress Grove property, used by the Audubon Society as a natural preserve, for research, and for limited public access. To the north, the Gate National Recreation Area manages land at Hamlet.

PURPOSE OF PARK ACQUISITION

In the 1940s real estate developers began to purchase large areas of beachfront land in Marin County, prompting local residents and conservation groups to save this area as a park and preserving public access to its popular beaches. On November 8, 1952, Tomales Bay State Park was formally dedicated and opened to the public.

The park originally consisted of the four beaches (Shell, Pebble, Heart's Desire, and Indian Beaches) and the upland properties that now comprise the Heart's Desire Beach Area. Marin County gave Shell Beach to the State in 1950 and the county and private parties contributed \$25,000 toward the \$150,000 purchase by the State of the rest of the Heart's Desire Area.

Subsequent properties in the Inverness Ridge, Millerton Point, Marconi Cove, and North Marshall Areas were acquired for general recreational, viewshed, open-space, and natural resource preservation purposes.

SPIRIT OF PLACE

Each place on the Earth has its own unique combination of geologic and atmospheric forces, lifeforms and ecosystems, and cultural influences. We can sum up these natural and cultural influences upon an individual as that area's "spirit of place." It is implicit in this "spirit of place" concept that each place on the Earth is different, has its own unique elemental chemistry, ephemeral atmosphere, overarching pattern of stars, and integration of lifeforms.

We are often oblivious to the unique spirit of the places we visit in our hurried modern society because we are so goal-oriented to get something done or to get somewhere else. And our indoor-oriented lives dull our sensitivities to natural rhythms and patterns and to the remnants of previous cultures. Many are not aware of the deep sense of well-being that can be promoted by sustained contact with nature, and how we are literally dependent on the physical world around us. State Parks offer opportunities to reconnect to the natural world, benefiting visitors while at the park and benefiting the community in general after visitors return home with an enhanced sense of connection to the natural systems that sustain us. These opportunities depend on sensitive stewardship by Department employees and others to care for park resources in ways that preserve and optimize the local “spirit of place.”

Each of California’s state parks has a unique spirit of place—a character or identity that holds a special value or meaning for the visitor. Most visitors sense the unique spirit of a park as they pass through the park entrance. They know they are in a special place set aside in perpetuity to preserve a special public value. The visitor might be only peripherally aware of it or they may be so aware of the park’s spirit of place that it calls them back time after time. This spirit of place is really a sense of belonging—a bond between people and the land. This connection with the earth’s landforms, lifeforms, weather, and waters is rare and especially valuable. Tomales Bay State Park is rich in such sensual opportunity to reconnect with our Earth, and the legacy of the Miwok people who lived so close to the spirit of this place that they were one with it.

TOMALES BAY ENVIRONMENTAL PHENOMENA

Tomales Bay State Park lies within an environment molded daily by powerful natural forces, including the weather, the tides, and the movement of the earth’s tectonic plates. The tectonic plates of the Pacific Ocean and the North American continent have long been grinding past each other in this stretch of the San Andreas Fault, periodically producing major earthquakes and forming the ocean-flooded valley that is Tomales Bay. The western peninsula between the ocean and the bay is geologically very different from the land on the eastern side of the bay, due to the fact that they exist on independent, moving tectonic plates. With parcels on both the western and eastern sides of the bay, the park exists on two different tectonic plates. An awareness of these phenomena can influence the visitor’s experience in the park, producing feelings of wonder, awe, and perhaps fear that another earthquake may not be far in the future.

Small vibrations in the fault may be felt on a subconscious level. The muffled roar of the ocean to the west can also influence the sense of nature’s raw power that recreates this place. Awareness of these dominant physical phenomena can profoundly deepen a visitor’s experience of the park. At Tomales Bay State Park the visitor is also in one of the most biologically rich environments on the planet – one of transition between land and water. The Earth’s “edge” environments contain a greater diversity of plant and animal species in a given area. Noticing the unique qualities of this area can enhance a visitor’s sense of vitality and can lift the visitor out of the routines of daily life to experience a sense of re-creation, one of the primary goals of the State Park System.

THE PARK'S THREE DISTINCT SETTINGS

The twelve-mile geologic rift of Tomales Bay sets the dramatic context for the park's five areas. The bay separates the western and eastern parts of the park but visually and recreationally connects them by water. Wherever one might be in the park, the bay is always a strong visual, geological, and emotional presence.

Visitors to the five areas of Tomales Bay State Park experience three distinct settings, each with its own spirit of place. These three experiences are found respectively in 1) the Heart's Desire Area, 2) the Inverness Area, and 3) the three park areas along Highway 1 on the east shore. In addition to the variations in geography and landscape, the rapidly changing marine weather and bay conditions, including fog, add a particular mystique and dynamic spectacle to all park areas.

The Heart's Desire Area has a special charm that many have fallen under the spell of. This area has an isolated feel to it while also being inviting and intimate in scale. The visitor approaches the park entrance by passing through the charming villages of Inverness Park and Inverness along Sir Frances Drake Boulevard with Tomales Bay to the right and Inverness Ridge to the left. After turning off Sir Frances Drake Boulevard onto Pierce Point Road one enjoys the lush-looking Bishop pine forest to the right as the road climbs to the park entrance. After entering the park, the road descends through the forest and brushlands with magnificent vistas of the long stretch of Tomales Bay soon leading to the beach parking areas.

The beaches are small sheltered and shallow-water pocket beaches framed by dark forests of oak, alder, madrone, and laurel. All the beaches, except for Heart's Desire Beach itself, are backed by small estuaries. The surrounding granite bluffs are covered with ferns and other lush vegetation that overhang the intertidal and marine world of barnacles, crabs, clams, and jellyfish. At low tide visitors can leave footprints in the wet sand as they explore around the headlands from beach to beach. Shells, fish bones, and mammal tracks can be found along the shore. Curious harbor seals can often be seen poking their heads above the bay waters watching the beachcombers. The shell middens of the Coast Miwok people who lived on these beaches allow one to reflect on the centuries that people have been coming to this area for sensual and material sustenance. One of the finest remaining virgin groves of Bishop pine in California is in the park's Jepson Memorial Grove, reached by way of a one-mile trail.

The three Inverness Ridge parcels are steep and have no developed public access points. This creates a very different visitor experience from the developed visitor facilities of the Heart's Desire Area. Local residents can hike on these lands from the end of local roads, perhaps without even knowing they are in a state park. Burned snags and thickets of young Bishop pines reflect the 1995 wildfire that swept Inverness Ridge. Wide vistas open up at the top of the ridge revealing the full sweep of the dramatic interaction of the forces of earth, life, sea, and air that make the Point Reyes/Tomales Bay area so inspiring and breathtaking.

The three East Shore parcels, Millerton Point, Marconi Cove, and North Marshall share

the characteristics of the coastline environment that connects them. As mentioned previously, the only currently accessible east shore park area is the Millerton Area. Most people currently experience the three east shore park areas as beautiful open space and, where there is a pull-out, as potential wayside stops. Except for local visitors walking at Millerton Point, none of these park areas are now destinations for visitors and most are not even aware that state park lands exist here.

The parts of these parcels that are to the bay side of the road are flat bluffs or marshlands and the lands on the east side of the road are relatively steep grasslands that were once pasture lands. Whether they stop to use the park areas or not, motorists benefit from the open space and natural vistas preserved by state and federal parklands and traditional agricultural uses. Small communities, scattered marinas, views of sailboats, and oyster and fishing vessels also provide richness to the spirit of place. Unlike the heavily forested park areas on the west shore, the east shore parcels are largely open brushland and grassland and provide the motorist, picnicker, or hiker a relatively continuous visual and physical proximity to the bay. However, there are no beautiful tree-framed pocket beaches on the east shore park areas to attract beach recreationists.

PURPOSE, SCOPE, AND PROCESS OF THIS GENERAL PLAN

This General Plan was developed to serve as a long-range management tool that provides guidelines for achieving the vision and purpose of the park. This document does not attempt to provide detailed management recommendations, but rather provides conceptual parameters for future management actions.

WHY DO WE NEED A GENERAL PLAN?

The Public Resources Code requires that a general plan be prepared prior to the development of permanent facilities.

A general plan:

- Establishes the unit's purpose, vision, and long-term goals
- Becomes the primary document and framework for a unit's development, management, and public use
- Serves as the basis for developing focused management plans and project plans
- Serves as a Programmatic Environmental Impact Report

WHERE DO WE GET THE INFORMATION?

- The general plan is based on an analysis of existing park resources information and additional information gathered during the planning effort.
- It is also based on systemwide planning and policies and input received from both the public and other agencies through the public involvement process.

WHAT IS THE SCOPE OF THIS PLAN?

A general plan considers the park unit within the larger context of the State Park System and the region. General plans provide general direction for the unit while avoiding specific details that could change before a project could be funded and implemented. Specific management details and facilities designs are deferred to future management plans and specific project development plans. General plans have no specific life span. They can be amended when changing park conditions and requirements necessitate substantial changes to park management direction

The general plan is a tool for meeting the following broad objectives to:

- Protect and perpetuate the unit's natural and cultural resources
- Provide necessary facilities for visitor use to help meet current and future recreational demand
- Determine appropriate interpretive services and facilities for educational and recreational purposes
- Promote a safe, enjoyable, and well-managed visitor experience
- Provide State Parks, federal, state, county agencies, private organizations, and individuals with a tool for coordinating their efforts to meet these objectives

Specifics, such as the exact location and design of a trailhead or how a vegetation management goal is met, will be determined by future management and project plans. These subsequent management or project plans will require additional data collection and Departmental and public reviews to ensure adherence to the goals and guidelines established within this General Plan.

The General Plan serves as a first-tier Environmental Impact Report (EIR), as defined in Section 15166 of the California Environmental Quality Act (CEQA) Guidelines. The analysis of broad potential environmental impacts discussed in the Environmental Analysis will provide the basis for future second level environmental review, which will provide more detailed information and analysis for site-specific developments and projects.

This General Plan, partnered with future management plans, endeavors to restore, maintain and interpret Tomales Bay State Park's natural and cultural resources, while providing opportunities for continued public use and enjoyment of this well-loved park. It is a job that will require the ability of management to respond appropriately as new challenges to the overall goals of this General Plan present themselves. To help with these challenges, the General Plan identifies an "Adaptive Management Process" which will assist park staff in monitoring and evaluating changes to resources or visitor experiences and in proposing and implementing actions to help restore the General Plan's vision and goals. The plan is a strategic framework for creatively responding to the park's major issues and opportunities in order to preserve the park's natural and cultural values and to benefit all Californians.

GENERAL PLAN PUBLIC INVOLVEMENT

Public involvement is an essential part of the general plan process which helps identify important issues that need to be resolved, provide ideas on how they can best be resolved, gather information and perspectives, identify public needs and concerns, and build partnerships and support to implement the plan's proposals.

Public input for this general plan was gathered and stakeholders were informed and involved in a number of ways, including a planning Website, a public scoping meeting, a park visitor survey, and a newsletter. Planned public involvement efforts include a future public meeting to review the plan proposals contained in the Draft General Plan that is distributed for public comment during the California Environmental Quality Act (CEQA) review process and a concluding State Parks Commission Hearing. Two coordination meetings were held with the Tomales Bay Watershed Council, Point Reyes National Seashore, and Marin County concerning their on-going planning efforts. A contact list was developed and added to throughout the planning process.

GENERAL PLANNING WEBSITE

A "General Plans in Progress" website for the Tomales Bay State Park General Plan was established on the California State Parks Internet site. This website contained planning information and opportunities for public input such as a visitor survey, California Environmental Quality Act Notices, newsletters, planning maps, and draft planning documents (including preliminary lists of issues, park purpose and vision statements, area management and visitor experience goals, and preliminary resource management and recreational development proposals).

PUBLIC SCOPING MEETING

A Public Scoping Meeting was held on May 6, 2003 at the Dance Palace in Point Reyes Station. The purpose of this meeting was to introduce the planning process and team and to hear the public's perspectives on planning issues and concerns, and recreation and educational opportunities. The scoping meeting was held in the "open house" format in order to facilitate personal interaction between the public and park staff. About 30 people spent a few hours studying 13 planning maps and documents and discussing ideas and asking questions with planning team members. The productive dialogue centered on what lands require special protection; what recreation opportunities are desired; what facilities are needed; and which natural, historical, and cultural values should be enhanced or interpreted.

COMMENT SHEET

See **Appendix A: Summary of Public Scoping Meeting Comments.**

A comment sheet was provided for participants to return by mail in order to register their ideas about the "menu of planning possibilities" that was presented at the meeting and

in Newsletter #1. Input on other issues and planning aspects was also solicited. Twenty four people responded with 99 comments. These comments were considered in the selection and revision of planning possibilities into the planning proposals set forth in this General Plan.

PARK VISITOR SURVEY

During the summer of 2003, a one-page survey was distributed to park visitors and placed in the local post office to get more feedback on the “planning possibilities” highlighted at the May 6 public meeting. Though the survey is not statistically large enough to be definitive, it does show what park visitors from both distant areas and within the local population like about the park now and what recreational enhancements they would most like to see added.

The 50 surveys returned by August 21 indicate interest in the following recreational enhancement possibilities in this order of support:

- Provide new trails in recently-acquired State Park lands on the east shore of Tomales Bay
- At Marconi Cove: Provide a 6-8 site walk-in campground for bicyclists and boaters
- Improve trail connections with Point Reyes National Seashore (in Heart’s Desire & Inverness Areas)
- At Marconi Cove: Provide day-use area with parking, restroom, educational panels, picnic facilities, and launching area for small boats and sailboards
- Create segments of the planned California Coastal Trail through the park
- Develop a 10-20 site drive-in campground in the park’s maintenance storage lot
- Adapt the former “Bike & Hike” campground to a multi-use group & individual campground
- Redesign the beach blufftop picnic area to better serve group picnics & special events
- Improve day-use parking and visitor facilities in the Millerton Area

To the question: “*What do you like most about the park now?*” respondents wrote things like: “...*quiet, beauty, wild, undeveloped, natural, peaceful, wild beaches, swimming, hiking, views, shallow-water beaches, picnicking, no RVs, bay access, mixed recreational uses, kayak access, small, natural, low-key, and family-oriented.*”

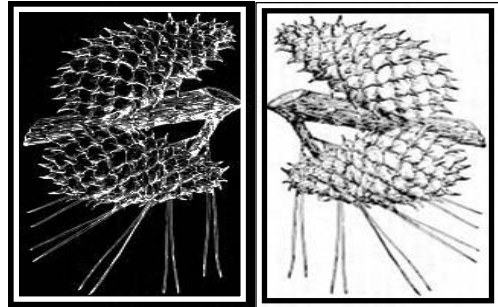
To the request: “*List your ideas for improving visitor facilities*” respondents wrote things like: “...*keep things simple, bike trails, kayak access to campgrounds, more picnic sites, better trailheads, more campsites, improve trails and swim areas, a native plant trail, more restrooms, interpretive panels, covered picnic tables, environmental education, and hot showers.*”

To the request: “*List any concerns you have about the park’s future*” respondents wrote things like: “...*overdevelopment, car-based development, overcrowding, fire, and understaffing.*”

INTER-AGENCY PLANNING COORDINATION

The general plan team worked with other public agencies, groups, and individuals to integrate our planning with regional concerns, efforts, trends, and opportunities. The State Park general planning team participated in two meetings that included representatives of the Tomales Bay Watershed Council, Point Reyes National Seashore, and Marin County in order to help coordinate the Tomales Bay State Park General Plan with the on-going planning work of these other organizations. The development of the *Tomales Bay Watershed Stewardship Plan* occurred with the participation of local state park representatives.

*EXISTING LAND USE,
FACILITIES,
INTERPRETATION AND
RESOURCES*



The following section is a summary of the existing conditions at Tomales Bay State Park. The information was adapted from the resources inventory conducted as part of the general planning process and provides the baseline data for the development of all aspects proposed by the general plan. Additional documentation of existing conditions at Tomales Bay State Park is available from the California State Parks at the Northern Service Center in Sacramento and the North Bay District.

EXISTING PARK LAND USE AND RECREATIONAL USE PATTERNS

PARK RECREATIONAL USE PATTERNS

Existing land use at Tomales Bay State Park has been shaped by the geologic, environmental, historical and social influences that have formed present day west Marin County. Topography, Tomales Bay, regional microclimates, vegetation diversity, public demand for recreation and preservation have all contributed to the visitor and land use activities within the park. Of the 2,224 acres currently owned by the park only about 160 acres contain visitor or administration facilities. The majority of park acreage is utilized for hiking, resource preservation, watershed conservation, and as wildlife habitat.

The desire for water access and water-based activities has been the major force affecting land use at Tomales Bay State Park. Beach recreation, kayaking, fishing, and wildlife viewing are the most popular activities. The majority of use associated with these activities occurs on a seasonal basis from April through October, with highest visitation occurring on weekends. Visitor use at the park is currently limited to day use activities. Other activities at the park include picnicking, and trail hiking.

Due to the geologic dynamics of this region, there are distinct differences between the west shore and the east shore properties of the park. The following describes these two different sides of the bay and typical visitor experiences and land uses associated with them.

WEST SHORE AREAS

The Heart's Desire Area and the Inverness Area on the west shore offer hiking in the cool shade of dense coastal vegetation with the pungent aroma of California bay trees and the craggy silhouettes of old growth Bishop pines. Visitors can stroll along secluded beaches while viewing abundant bay wildlife or picnic while enjoying panoramic bay views. Steep terrain, wide beaches, and abundant vegetation characterize the west shore properties of park. When viewed from Tomales Bay, the west shore appears as a patchwork of shades of green climbing up hillsides and dipping into valleys. Vegetation and topography help shelter these parcels from strong coastal winds and the deep bay waters allow for good boat access. This mosaic of rich vegetation, appealing beaches, and varied terrain has made the Heart's Desire Area popular for over fifty years. All of the park's formal beaches, designated trails, and the vast majority of its day use visitor

facilities as well as its staff residences and maintenance facilities occur within the Heart's Desire Area.

The Inverness area of the park, also located on the west side of the bay, consists of three disjointed properties separated by land owned by the Inverness Public Utility District and The Nature Conservancy. The area is characterized by dense coastal vegetation and steep terrain. Land use in these parcels consists of hiking, fire fighting access, open space, and watershed preservation. There is currently little park visitor use of these parcels.

EAST SHORE AREAS

Hilly terrain, narrow beaches, annual grasslands, and tidal marshes characterize the eastern properties of the park. When viewed from Tomales Bay the east shore appears as a uniform texture of soft grasses rolling across the landscape, broken only by clusters of brush dotting the grasslands and strips of trees marking the creek drainages. The lack of large vegetation and the prevailing coastal winds often create windy conditions, and shallow waters combined with difficult shoreline conditions make boat access problematic.

Acquired from the mid 1970's to 2002, many of the east shore properties are relatively recent additions to the park. Land use associated with these parcels has included ranching and shellfish farming. These historic land uses combined with harsher environmental conditions and the general lack of recreational facilities has led to minimal public use at these locations. Current land use occurring on these parcels includes wildlife viewing, picnicking, and fishing. The highway can be a source of noise, but a visitor to these parcels is frequently treated to spectacular vistas of the bay and the winds, fogs, and sunlight that cross it. In the upper areas of the parcels east of the highway, in clear conditions, the whole bay setting can be seen and visitors can experience a sense of the expansiveness of the region and its history.

TRAFFIC CIRCULATION

Sir Francis Drake Boulevard and State Highway 1 are the primary access routes to all areas of Tomales Bay State Park. Sir Francis Drake Boulevard provides access to the west shore parcels of the park. The park's Inverness Area parcels are accessed either directly from Sir Francis Drake Boulevard or by fire and service roads, primarily Perth Way, extending from Sir Francis Drake Boulevard and Mount Vision Road. Pierce Point Road intersects Sir Francis Drake Boulevard 2.5 miles north of the town of Inverness and connects to the park entrance road leading to Heart's Desire Beach. This route is the only officially-signed road access into the Heart's Desire Area. Camino Del Mar road, which intersects Sir Francis Drake Boulevard 1 mile north of Inverness, provides unsigned access to Shell Beach. Once inside the Heart's Desire Area of the park, parking is available at Heart's Desire Beach, the upper Heart's Desire Beach picnic area and Shell Beach. Heart's Desire Beach provides 64 parking spaces, Heart's Desire picnic area offers 80 spaces, and Shell Beach provides 15 spaces for park visitors. All

beach parking areas fill to capacity in the Heart's Desire Area during peak season weekends.

Access to East shore properties of the park is provided directly from State Highway 1 but is generally quite limited due to lack of recreational development. Currently, the only formalized public access is at Millerton Point where an unpaved wayside pullout provides parking for vehicles. Gated access to Sheep Ranch Road is located on the east side of Highway 1 at Millerton Point. An informal pullout near Tomasini Point, located north of the Millerton Point pullout on Highway 1, provides parking for visitors wanting to hike the trail to Tomasini Point. Park maintenance access is provided to the Marconi Cove Area through a locked gate located directly off Highway 1.

TRAFFIC COUNTS AND LEVEL OF SERVICE

The following table illustrates the peak/hour, peak/month and annual average daily traffic counts for Sir Francis Drake Boulevard and Highway 1.

Traffic Counts for Highway 1 and Sir Francis Drake Boulevard			
	Peak/Hour	Peak/ Month	Annual Average Daily Traffic
*Highway 1	700	6900	6500
**Sir Francis Drake Blvd	385	2193	1500
*State of California, Department of Transportation, Traffic Operations Division, 2001 traffic counts **Marin County Public Works. June and July 1996. Counts taken at intersection of Sir Francis Drake Blvd and Pierce Point Road.			

ROAD EASEMENTS, RIGHT-OF-WAYS, AND ENCUMBRANCES

Private property owners at Shallow Beach maintain a road easement, along Shallow Beach Road, through the park's Heart's Desire Area. This road easement provides the only access to the Shallow Beach Homeowners Association properties. Power lines running through the center of the Heart's Desire Area are located within a Pacific Gas and Electric Company 50'-wide right-of-way. Property owners east of the park's Millerton Area maintain a 60'-wide road easement through park property along Sheep Ranch Road. Caltrans maintains a 50'-75'-wide right-of-way along Highway 1. Marin County maintains a 50'-wide right of way through the park's Inverness Area along Sir Francis Drake Boulevard.

Service volumes for a class I two lane highway were used to calculate the Level of Service (LOS) currently provided on both roads (Highway Capacity Manual, 2000). Current peak/hour volumes for both roads show a LOS rating of "C". Level of Service C denotes a reasonably steady, high volume flow of traffic, with some limitations on movement and speed, and occasional backups on critical approaches.

EXISTING RECREATIONAL AND OPERATIONAL FACILITIES

TRAILS

See **Appendix B: Existing Facilities at Tomales Bay State Park** and Appendix C: *West Marin Recreation Facilities Summary*.

The only maintained trails within the park are the Johnstone Trail (4 miles), Jepson Trail (1.1 miles) and the Indian Beach Nature Trail (.5 miles) located in the Heart's Desire Area. These unsurfaced trails are available to hikers. There are no official connections between designated trails located in the park and other regional trail systems.

Unofficial trails also exist inside the boundaries of Tomales Bay State Park. These trails are primarily used by local residents for nature hiking and fishing access. The Millerton Area has a 1-mile loop trail, formerly a ranch road, starting and ending at the Millerton wayside pullout parking lot and a 1.3 -mile trail starting from an informal pull-out along Highway 1 and ending at Tomasini Point. There are numerous unofficial hiking routes within the park's Inverness Area to include both fire road and single-track trails connecting residences on Inverness Ridge to the Point Reyes National Seashore. The roads on the park land above Inverness are maintained by the Inverness Public Utility District to access their water collection points.

DAY USE FACILITIES

See **Appendix D: Tomales Bay Beaches and Access Areas**

BEACHES

Beach-related activities are the principle form of recreation at Tomales Bay State Park. All formally designated beaches are located within the Heart's Desire Area and include Indian Beach, Heart's Desire Beach, Pebble Beach, and Shell Beaches 1 and 2. Heart's Desire Beach is the most popular beach at the park. This popularity is due to the close proximity of parking and ease of access for park visitors. The parking lot for the upper picnic area, located uphill from the beach, serves as overflow parking for Heart's Desire Beach. Pebble Beach is accessed by way of a .25 mile trail from the upper picnic area parking lot and Indian Beach is accessed by way of a .25 mile trail from the Heart's Desire Beach parking lot. These beaches tend to be less crowded and offer visitors a quieter and more secluded beach experience. Shell Beaches 1 and 2 are accessed from the Shell Beach parking area by way of a ¼ mile trail. Shell Beach is primarily used by local residents and those familiar with the Tomales Bay region. Restroom facilities are provided at all beach locations.

MAP 3A: PARK FACILITIES-NORTH PARK AREAS

MAP 3B: PARK FACILITIES: INVERNESS PARCELS

PICNIC AREAS

The primary picnic facility within the park is located in the park's Heart's Desire Area and is accessed via the picnic parking lot located near Heart's Desire Beach. This site offers visitors 45-50 picnic tables situated on a vegetated bluff overlooking Tomales Bay. The site offers a variety of picnicking environments encompassing everything from secluded picnic tables screened from other tables to large open areas with multiple picnic tables and panoramic views of Tomales Bay. There is a reservable group picnic area here called "Vista Point." Other picnicking opportunities are available at Heart's Desire Beach and at the Millerton Point parking lot. These sites consist of scattered picnic tables.

OVERNIGHT FACILITIES

There is currently no overnight use at Tomales Bay State Park. Facilities for a hike/bike camp do exist near the picnic area in the Heart's Desire Area and consist of 6 sites with food lockers, picnic tables and grills. Since the park was closed at night and visitor vehicles were not allowed in the park overnight visitors had to park their cars outside the park and walk down the Jepson Trail to the campsites. The park closed these sites in July 2002 due to the operational constraints of this situation.

PARK CONCESSIONS

Tomales Bay State Park currently does not provide any recreational activities or other services by private concessionaire.

OPERATIONS FACILITIES

The majority of park operations facilities are located in the park's Heart's Desire Area, including the park ranger office and entrance fee collection area. The maintenance facility is located downhill from the ranger office and consists of a maintenance shop, indoor/outdoor vehicle and equipment storage, trailer pad, and fuel station for park vehicles. Also located in this parcel is an outdoor storage area (the "Bone Yard") where old equipment, building supplies, and debris are stored. Three employee residences are located downhill from this storage area.

Two operations facilities are located outside the park's Heart's Desire Area. One employee residence is located at Millerton Point and two abandoned trailers and an unmaintained residence structure are located in the Inverness Area along North Dream Farm Road.

UTILITIES

See **Appendix E: *Utilities at Tomales Bay State Park***

WATER

Water for the residence at Millerton Point comes from a well on the east side of Highway 1. Another well located further upslope in a small drainage feeds an impoundment left from cattle grazing prior to purchase by parks.

The water system at the Heart's Desire Area utilizes a well and pump, located at the storage area (the "Bone Yard"), to lift water into a 50,000 gallon storage tank located in the same area. Water is then distributed by means of a gravity system to facilities located in the Heart's Desire Area to include the ranger office, park residences, the maintenance facility, the Heart's Desire Beach restroom and the upper picnic area restroom. An additional 40,000 gallon water tank stores non-potable water for fire emergencies. A well and pump system provides water to the park residence located at Millerton Point.

Park-owned property on the Inverness Ridge is an important contributor to water recharge for the Inverness Public Utility District and the private wells and springs that are developed within the granitic rocks along Inverness Ridge.

ELECTRICITY

Pacific Gas and Electric Company provides electricity to the park. Electricity is provided to the same park facilities mentioned above as being served by the water system. Electricity is distributed through the Heart's Desire Beach area from the primary PG&E overhead power line located in the vicinity. A smaller overhead power line connects to the primary line and provides electricity to the Heart's Desire park residence. Electricity is then run to the ranger office and maintenance facility utilizing buried lines. Electricity is also available to the park residence located at Millerton Point and the North Dream Farm Road property.

TELEPHONE

Phone service to the park is provided by SBC. A pay phone is located at park headquarters. The ranger office, the Heart's Desire Area residences and maintenance facility, and the Millerton Area residence use individual LPG tanks to provide space and water heating.

WASTEWATER TREATMENT

Septic systems are utilized at all indoor plumbing facilities located within the park to include the following locations: (Heart's Desire Area) ranger office, residences, maintenance facility, Heart's Desire Beach restroom, and upper picnic area restroom,

and the Millerton Area residence. Septic system capacities range from 1200 gallons to 1800 gallons. All other restroom facilities utilize 250-gallon vaults that are emptied approximately 2-3 times per year.

EXISTING INTERPRETIVE PROGRAMS AND FACILITIES

Interpretation helps visitors gain understanding and appreciation of the stories of the park's natural, cultural and recreational features. The greatest opportunity to forge a meaningful connection to the stories of the park occurs in the area of Heart's Desire Beach and Indian Beach, the largest archeological site in the Park.

ENVIRONMENTAL LIVING PROGRAM

The park's popular environmental living program (ELP) offers children an overnight park experience that explores the interaction between people and their environment. The program at Tomales Bay State Park started twenty-five years ago and is the only Native American ELP currently offered by State Parks. School groups come from as far north as Chico and Paradise, from the east side of the Sierras and from as far south as Santa Cruz. Since the demand for the program is greater than the space available, an annual lottery provides tentative dates to over half of the teachers requesting spots. This program requires each class teacher to participate in a two-day workshop held in mid-September at the park. Up to six parents or aides per class are encouraged to attend as well. During the past eighteen years, a strong volunteer force of five teachers has assisted the ranger conducting the workshop.

This program serves up to 700 children per year. Each Thursday during the spring and fall months a class of 30 to 35 fourth, fifth or six graders arrive at Heart's Desire Beach parking lot to participate in this overnight program. As the children hike the trail to their overnight destination at Indian Beach they step back in time to role-play a pre-European contact Native California Indian life-style. This program conforms to the California history academic content standards and functions as an extension and enrichment of the classroom learning of social studies of California's rich heritage.

OTHER INTERPRETIVE PROGRAMS OFFERED IN THE PARK

Rangers present day-use programs at the park on the Coast Miwok, geology, and the water quality of Tomales Bay. Before the "Hike-and Bike" campground closed, campfire programs were offered to groups who used that campground.

OUTREACH PROGRAMS

Rangers also present off-site interpretive programs at local schools and for senior citizens camping in recreational vehicles at the private Olema Ranch campground. The interpretive ranger occasionally assists with a program for 200 eighth graders at *Kule*

Loklo, a replica Coast Miwok village at the Point Reyes National Seashore. The story of the Coast Miwok is the most common topic. Interpretive objects used in demonstrations for these presentations include skins, baskets, and obsidian.

INTERPRETIVE INFORMATION

Printed interpretive information on the park is currently limited to the park brochure and a leaflet on mushroom identification, prepared in cooperation with the Mycological Society of San Francisco.

SELF-GUIDED NATURE TRAIL

A self-guided nature trail from Heart's Desire Beach to Indian Beach has thirteen interpretive plates identifying native plants and how they were used by the Coast Miwok. These panels were recently redesigned and updated and will be installed in the spring of 2004.

WAYSIDE EXHIBITS

Six interpretive panels currently exist in the park (displayed in four wayside panel exhibits structures). Five of these exhibit panels occur in the general area of the Heart's Desire Beach parking lot and the sixth panel occurs at the beginning of the Millerton Point loop trail. The locations and themes of these panels are as follows.

Heart's Desire Beach. By the restroom and entrance to the nature trail a single interpretive panel introduces the nature trail and Coast Miwok use of plants. Two two-sided interpretive wayside exhibit structures placed between the parking lot and the beach display four panels covering the following topics:

- Clams and Cockles
- Boating Guide and General Information
- Fire Ecology of the Bishop Pine Forest
- The Coast Miwok World Creation Story

Millerton Point. At the beginning of the Millerton Point loop trail a single panel interprets an osprey nesting site usually occupied February through May.

EDUCATIONAL USE BY OTHER GROUPS

Tomales Bay State Park is a popular destination for many groups interested in the natural history of the area. These groups do not use the interpretive resources of the Park staff, but bring their own expertise. These experts provide informal programs ranging in topics from birds, mushrooms, seashore life, nature and geology. Some these groups are associated with Point Reyes Bird Observatory, Marin County Open Space, Mycological Society, or the College of Marin.

COLLECTIONS

Artifacts excavated from the park by Tom Wheeler in the 1990s are stored in the archeology laboratory facility in West Sacramento. Artifacts excavated by Clem Meighan in 1952 are in the Phoebe Hearst Museum at the University of California at Berkeley. A few artifacts recovered from middens at Tomales Bay State Park are stored at the park. A deep mortar is one of the most interesting artifacts stored at the park. Non-archeological interpretive props (modern reproductions) used for hands-on demonstrations include various animal skins, coiled baskets and a mortar and pestle.

PARK INTERPRETIVE SUPPORT

There is currently cooperating association exclusive to Tomales Bay State Park. Tomales Bay State Park is supported by the Friends of Tomales Bay State Park and a cooperating association, the Marin State Park Association. These organizations provide funding and outreach to help support the park's interpretive efforts. The main volunteer effort occurs with the teacher support of Environmental Living Program.

NATURAL RESOURCES

CLIMATOLOGY

Tomales Bay, located on the Point Reyes Peninsula, has a humid Mediterranean climate. Rainfall occurs primarily in the cool, wet, winter season that normally extends from November to March. The average rainfall varies from 20 to 40 inches/year along the Point Reyes Peninsula, depending upon the proximity to the coast and the topography. The summers are dry, with coastal fog commonly occurring from July through September. The fog forms due to the warmer ocean air moving inland over the colder near-shore waters. Inverness Ridge forms a barrier to the fog, so that the Olema Valley and Tomales Bay may be sunny and warm while fog shrouds the area west of the ridge.

The average temperature varies little between the winter average of 50° F and a summer average of 55° F, due mainly to the moderating influence of the Pacific Ocean. Inland areas generally have higher temperatures in the summer than areas closer to the coast.

AIR QUALITY

In Marin County, air quality is generally good as there are no major air pollution sources, and prevailing winds are mostly off the ocean. However, since the winds blow eastward, sources of air pollution in Marin can contribute to air quality problems in other parts of the Bay Area and beyond. The air pollution potential is highest on the eastern side of Marin County where the largest population centers are located. In the Tomales Bay

area, the low population density contributes to good air quality. In addition, the prevailing winds are from the west off the ocean, so there are no upwind sources of pollution.

The only air monitoring station in Marin County is located in San Rafael, approximately 25 miles southeast of Tomales Bay State Park. Only ozone and PM-10 (coarse airborne particles) exceeded ambient air quality standards in the five years from 1996 to 2000 at the San Rafael monitoring station. Conditions monitored in the urban setting of San Rafael will be different than in Tomales Bay State Park, as Tomales Bay has a rural setting and is closer to the ocean. The ozone levels for Tomales Bay State Park are less than 70 parts per billion, below the ambient air quality standard (Federal) of 80 ppb.

Some sheltered valleys in Marin County are susceptible to localized PM-10 buildup and carbon monoxide emissions during the winter. The poor dispersion characteristics of these valleys plus wood-burning activities and vehicle emissions could lead to air quality standards being exceeded locally. However, levels are not known since the Bay Area Air Quality Management District does not monitor pollutant concentrations in the more rural areas.

GEOLOGY

See **Appendix M: Glossary of Geologic Terms**

GEOLOGIC SETTING

Tomales Bay State Park is located in the central Coast Range Geomorphic Province that extends 600 miles along the California coast from the Klamath Mountains in the north, south to the Transverse Ranges and east to the Central Valley. This province is characterized by northwest-trending ranges and valleys subparallel to the San Andreas Fault. Tomales Bay, a drowned rift valley, owes its existence to geologic forces, specifically movement along the San Andreas Fault Zone (SAFZ). This fault zone marks the boundary between the North American plate to the east and the Pacific plate to the west. The rock types are different in both age and composition on either side of the SAFZ, resulting in different topography, soils, vegetation, and wildlife on the opposite sides of Tomales Bay.

Bedrock on the east side of the SAFZ consists of the 80-140 million years old Franciscan Formation, a heterogeneous assemblage of clay-rich greywacke sandstone, shale, chert, and greenstone (metamorphosed volcanic rock). Isolated outcrops of the late Pleistocene Millerton Formation occur overlying the Franciscan Rocks. On the western side of the SAFZ, bedrock consists of Upper Cretaceous granitic and older metamorphic rocks of the Salinian Block that form the backbone of Inverness Ridge. To the west of Inverness Ridge, younger Miocene to Pliocene (12-5 million year old) marine sedimentary rocks overlie the granitic and metamorphic rocks. These sedimentary rocks are not found within the Tomales Bay State Park boundaries. On both sides of the SAFZ, younger alluvial sediments occur along stream channels and beaches.

GEOLOGIC FORMATIONS

Metamorphic Rocks – West Side of Fault Zone

The oldest rocks in the park are roof pendants containing metamorphic rocks such as mica schist and marble, with some quartzite, scattered within the granitic rocks of Inverness Ridge. These rocks are the remnants of the sedimentary rocks (shales, sandstones, and limestones) that were invaded and metamorphosed by the intrusive granitic rocks approximately 80-100 million years ago during the Cretaceous Period.

Granitic Rocks – West Side of Fault Zone

The Cretaceous granitic pluton that composes Inverness Ridge consists mainly of quartz diorite and granodiorite (see igneous rock classification in the appendix). The rock is broken by jointing and other fractures into 1 to 6 inch blocks, and is cut by faults in some areas. Weathering is pervasive and deep (as much as 60 feet), resulting in a decomposed sandy material.

Millerton Formation - East Side of Fault Zone

The sedimentary Millerton Formation, of late Pleistocene Age (approximately 50,000 years old), consists of fossil-bearing marine and non-marine clays, silts, sands, gravels, and conglomerates that are deeply weathered and poorly consolidated. Fossils found include numerous invertebrate species of pelecypods (bivalves), gastropods (snails), and arthropods (segmented animals, such as crustaceans). Within Tomales Bay State Park, the Millerton Formation occurs on the headlands (Millerton and Tomasini Points) on the northeast side of Tomales Bay. This formation is confined to the San Andreas Fault Zone and was likely deposited in an environment similar to the existing Tomales Bay (mudflats and freshwater lagoons). Subsequent uplift on the order of several hundred feet has exposed the rocks along the east side of Tomales Bay.

Franciscan Formation

The Franciscan rocks were deposited as muds, sands, and lava flows on the sea floor 80-140 million years ago (Jurassic to Cretaceous Period). Burial and then subduction of these materials beneath the North American continental crust subjected them to low-grade metamorphism, shearing, and crushing. Then, subsequent uplift thrust these rocks to the surface, along with incorporated bodies of serpentine (former ocean crust). The result is Franciscan mélangé, a mostly sheared sandstone and shale with some coherent blocks of rock.

Recent Alluvium

Alluvium occurs on both sides of the SAFZ, along stream channels and on the flat lands and beaches lining Tomales Bay. The alluvium on the west side of the SAFZ, derived from the granitic rock, is largely a coarse- to medium-grained sand, with gravel and finer materials. Alluvium derived from the Franciscan rocks east of the SAFZ contains a higher percentage of finer silts and clays, with angular sands and gravels of chert, greenstone and sandstone.

MINERAL DEPOSITS

Information on ore deposits within Tomales Bay State Park is limited. Tungsten-bearing ore (scheelite) was discovered near a limestone quarry in Inverness Park. The ore was associated with the mica schist in a roof pendant. Other outcrops of mica schist within the park may also contain scheelite. The Borello Quarry, located south of the Millerton acquisition east of Highway 1, is developed in the Franciscan Formation. The rock types mined for road base and drain rock were sandstone, shale, greenstone, chert, and pillow basalts. Similar materials may be present on park property in the vicinity.

GEOLOGIC HISTORY

Rocks on the west side of the SAFZ are part of the Salinian Block, an “exotic” block that has been transported north by movement along the SAFZ. These rocks are also called the Sur Series because they are similar to rocks exposed in Big Sur, California. The oldest metamorphic rocks, found on Inverness Ridge, started out as sedimentary rocks deposited as sandstone, shale and limestone approximately 350 million years ago (Paleozoic Era) far to the south near the current location of Central America. They were intruded by the granitic rocks about 60-100 million years ago (Middle to Upper Cretaceous Period) and metamorphosed due to the heat and pressure. Uplift and erosion has removed much of the metamorphic rocks and exposed the granitic rocks. Several periods of submergence and uplift deposited and eroded the sedimentary rocks found west of Tomales Bay State Park on the Point Reyes peninsula. Starting approximately 28 million years ago, movement on the SAFZ of approximately 1.0 to 0.5 inch/year has transported these rocks to their present location. They continue to move northward at the same rate.

The Franciscan rocks were originally deposited as sands and shales by turbidity currents (underwater landslides) in deep ocean waters during the Jurassic and Cretaceous periods (65-200 million years ago). The deposition occurred in an offshore subduction zone trench. These sediments were then transported westward on the Pacific tectonic plate and subducted underneath the North American continent. Some of the rocks were scraped off the subducting plate and, along with pieces of the ocean crust and mantle (basalt, chert and serpentine), became attached to the North American continent. The relatively quick burial resulted in only low-grade metamorphism of the Franciscan rocks. Around 6 to 10 million years ago, the SAFZ had extended from the south to the area of Tomales Bay, and the plate boundary movement shifted from subduction to right lateral movement, bringing the granitic and metamorphic rocks of the Salinian block adjacent to the Franciscan rocks.

GEOLOGIC HAZARDS

Seismic Hazards

The San Andreas Fault Zone (SAFZ) is a predominate feature that slices through the park and is responsible for the formation of Tomales Bay. The 1906 earthquake epicenter was located near the town of Olema at the southern end of Tomales Bay. The

SAFZ in this area is capable of generating an earthquake of Richter magnitude 7 or greater every 75 to 300 years, with as much as ten feet of horizontal ground displacement. The Alquist-Priolo Earthquake Fault Zone maps show that parts of Tomasini and Millerton Points (Tomales Bay State Park) fall within the zone, defined as 50 feet on either side of the active fault trace. Restrictions apply to building within this defined fault hazard zone and a geologic investigation is needed before a project can be permitted by the local agencies.

Earthquake-induced damage resulting from ground shaking, ground surface rupture, liquefaction, lateral spreading, landsliding, possible tsunamis, and seiches (earthquake-induced water waves) can be expected within Tomales Bay State Park. Ground shaking is the primary cause of damage during an earthquake. The underlying geologic materials affect the intensity and the duration of the shaking experienced. Ground surface rupture affects only a limited area where the ground actually breaks and moves both vertically and horizontally. Liquefaction occurs when loose, unconsolidated, water-saturated sediments are subjected to shaking during an earthquake. The sediments liquefy from the increased pore water pressure and lose their strength. Liquefaction causes ground failures such as lateral spreading, landslides (mud and debris flows), fissuring, and loss of bearing strength, which can lead to damage to and collapse of structures.

The loose surficial deposits on both sides of Tomales Bay are more susceptible to ground shaking, liquefaction, differential settlement, and shallow slope failures. These areas include the alluvial stream valleys and the shoreline, estuaries, and marshy areas along Tomales Bay. Areas underlain by the younger, poorly-consolidated Millerton Formation (Millerton and Tomasini Points) are also susceptible to earthquake-induced damage. Damage observed in the Tomales Bay area after the 1906 earthquake were shallow cracks in alluvium (in small estuaries near Inverness) and on hillslopes, bedrock cracks in numerous areas, landslides on steep slopes, and shifting of mudflats along the bay.

The Geologic Hazards Map shows liquefaction and landslide susceptibility within Tomales Bay State Park. Liquefaction ratings of very high to very low are based upon factors such as type and age of geologic unit and the depth to groundwater. Tsunamis and seiches are water waves that can be triggered by earthquakes. Tsunamis are generated in the ocean and travel harmlessly until they reach land. In the shallower water, the wave increases in height and can inundate low lying areas. The amount and extent of damage is determined by the wave runup (rush of water up the beach) and the horizontal distance the runup penetrates inland (inundation). Seiches are waves that are generated in an enclosed or semi-enclosed water body such as Tomales Bay. Currently there are no tsunami or seiche inundation maps for the Marin County coast. However, any low-lying areas around the bay margin (beaches and estuaries) should be considered susceptible to inundation by both tsunamis and seiches, should they occur.

Disruption of water supplies from groundwater wells and springs may also occur after an earthquake. The disruption may be due both to changes in natural groundwater flow and damage to water supply lines due to ground rupture or severe shaking. Disruption

of electrical, telecommunications, and sewage lines may also occur due to shaking and ground rupture.

Landslides

The sheared Franciscan mélange on the east side of the SAFZ is subject to landsliding, specifically slow-moving debris flows and soil creep. Debris flows can occur naturally as a result of erosion of the sheared rocks or by earthquake shaking, but can be triggered or accelerated by human-caused land disturbances such as grading, road building, removal of vegetation, and introduction of surface and subsurface water from irrigation and septic leach field systems. The Franciscan mélange rocks usually develop soils with high clay content, usually montmorillonite, which has a high shrink-swell potential. These soils have low shear strength when wet and the repeated shrinking and swelling contributes to downslope soil creep. The poorly consolidated Millerton Formation is susceptible to slumping. Several small failures were observed at Millerton Point, some possibly exacerbated by runoff concentrated and channeled by bluff-top roads and trails.

Landslides can also occur on the west side of the SAFZ in the Inverness granitic rocks. While these weathered rocks tend to support steep roadcuts under fairly dry conditions, saturation with water during heavy rains or from leaking water or sewer lines can result in slope failures. A number of debris flows occurred on the east slope of Inverness Ridge in 1982, in an area that had previously been relatively free of landslides. During a period of intense rainfall, the decomposed granitic rock became saturated and failed, resulting in debris torrents that moved along drainages as fast as 32 feet/second. The debris torrent scoured away the decomposed material in the drainage down to fresh bedrock and deposited the sediments, along with toppled trees and other vegetation, on the flat canyon bottoms. The Geologic Hazards Map designates areas that may be susceptible to landsliding in the future and denotes the stream channels that may be susceptible to future debris flows.

MAP 4A: GEOLOGIC HAZARDS-NORTH AREA

MAP 4B: GEOLOGIC HAZARDS-INVERNESS PARCELS

Erosion

Human activities within the Tomales Bay watershed have altered the landscape, resulting in increased sediment and nutrient input to Tomales Bay. On the east side of the bay, historic land uses such as farming and ranching have contributed and still are contributing to surficial erosion. Cattle-induced erosion from trampled streambanks and steep terraced cattle trails are declining now that grazing has been removed from the Millerton and Tomasini Point acquisitions on the east side of Highway 1.

TOPOGRAPHY

Tomales Bay State Park is located within the Coast Ranges geomorphic province and borders the dominant topographic feature of the area, Tomales Bay. Tomales Bay is a narrow marine embayment formed by the underlying San Andreas Rift Zone. The San Andreas Rift Zone is responsible for the northwest trending orientation of the ranges and valleys in this area. Park topography consists of level land along the shore of Tomales Bay rising steeply west nearly to the crest of Inverness Ridge and less steeply east to the about the mid-slope of Bolinas Ridge.

Elevations in the state park range from sea level to approximately 1240 feet on Inverness Ridge near the summit of Mount Vision, which lies within the boundary of the adjoining Point Reyes National Seashore. The Inverness Ridge portion of the park has greater topographic relief than parklands east of Tomales Bay. Inverness Ridge slopes typically are 30 percent or greater, exceeding 50 percent on the uppermost slopes. East of Tomales Bay slopes average less than 10 percent at Millerton Point and locations west of Highway 1. Slopes east of the highway average about 25 percent, but can be as steep as 50 percent.

The park is drained by numerous small, permanent, and intermittent streams that empty into Tomales Bay. Millerton Gulch is the largest stream draining lands east of the bay. Inverness Ridge parcels are drained by several unnamed streams, most of which are intermittent.

SOILS

Tomales Bay State Park is located in the Northwestern Coast Ranges Soil Region (Soil Region 1), as described by E. R. Storie. Soil Region 1 encompasses steep mountain ranges and small valleys of the Coast Ranges from the Santa Cruz Mountains north to the Oregon border.

Twenty-three soil mapping units occur in the park, eighteen of which are classified into one of twelve defined soil series. These soils are derived from igneous or sedimentary rocks, or alluvium from various kinds of rocks. Most of the park's soils are moderately deep to very deep, typically exceeding 31 inches in depth. In general, an increase in slope corresponds with a decrease in the depth of a soil; hence soils found on Inverness Ridge are shallower than those on the east side of Tomales Bay. The erosion potential for park soils is mostly moderate to high. Drainage of soils varies widely,

ranging from poorly drained to somewhat excessively drained.

The most common soils on the west side of the park are those of the Sheridan series, which are moderately deep, well drained, and have a moderate to high erosion potential. The most common soils east of Tomales Bay are those of the Olompali, Los Osos, and Bonnydoon Series. Olompali soils are deep, somewhat poorly drained, and have a moderate to high erosion potential. Los Osos soils are moderately deep, well drained, and have a moderate to high erosion potential. Soils of the Bonnydoon Series are shallow, somewhat excessively drained, and have a moderate to high erosion potential.

The U.S. Department of Agriculture's Natural Resources Conservation Service has evaluated the suitability of Marin County soils for various uses. Potential land uses that have applicability for California State Park units are camp and picnic areas, trails, dwellings without basements, and septic tank absorption fields. Soil limitation ratings are moderate to severe for all of these uses on every park soil. Most areas are rated as severe. The most common limiting factors are slope, depth to rock, and slow percolation. Careful planning and a greater investment of resources can overcome moderate to severe limitations.

HYDROLOGY AND WATER RESOURCES

The Tomales Bay watershed encompasses approximately 219 square miles of rugged terrain. From the peaks of Mount Tamalpais and Bolinas Ridge, the watershed extends east to the headwaters of Walker Creek and Nicasio and Lagunitas Creeks, and west to the Inverness Ridge. There is a rich variety of plant communities here including Bishop pine forests, mixed evergreen forests, grasslands, coastal strand and prairie, marshes beaches and dunes. Agriculture is the primary land use within the watershed for dairy, beef cattle, and sheep production.

Tomales Bay proper opens to the Pacific Ocean at the northern end just south of Bodega Bay and extends 12 miles to the southeast along the San Andreas Fault Zone. It is 0.4 to 1.5 miles wide and averages less than 20 feet in depth. The bay's linear shape and narrow mouth limits tidal exchange with the ocean, and so there tends to be a fluctuation between fresh water in the rainy winter months and hypersaline during the dry summer months. Seasonal fluctuations in nutrient levels and salinity result from variations in the strength of the coastal upwelling and freshwater inflows primarily from Lagunitas and Walker Creeks. The average annual maximum tidal swing is about eight feet (2.5 meters).

Tomales Bay is an important ecosystem that supports abundant and diverse habitats for wildlife, aquatic organisms, and plants. These habitats include eelgrass beds, intertidal and mud flats and salt and fresh water marshes. Mariculture and fishing are important economic resources in the area and are dependant upon the health of the bay. Tomasini and Millerton Point are adjacent to a commercial oyster farm, which leases the underwater areas within park boundaries. Since Tomales Bay State Park offers

opportunities for clam digging, shellfish collection, swimming and fishing, water quality issues affecting these resources are an important concern.

The Tomales Bay watershed is a part of the Regional Water Quality Control Board (RWQCB) Marin Coastal hydrologic planning basin. Beneficial uses for the Tomales Bay basin include marine habitat, preservation of rare and endangered species, fish migration, water contact water recreation (swimming fishing, diving, and wading); non-contact water recreation (boating, hiking camping, beach combing, bird watching, tide pool and marine study), commercial and sport fishing (halibut, clams, herring, rock crab, and ghost shrimp), shellfish harvesting, fish spawning, and wildlife habitat. Tomales Bay and Millerton Gulch are designated as important surface waters under the Basin Plan. The *Tomales Bay Watershed Stewardship Plan (2003)* was prepared to protect and enhance these beneficial uses and improve water quality. The stakeholder members of The Tomales Bay Watershed Advisory Council consist of local groups, property owners, businesses, and public agencies including California State Parks, and regulatory agencies (see Water Quality section below.)

Groundwater resources are scarce within the Tomales Bay basin. Lands on the east shore of Tomales Bay do not have well developed ground water sources within the Franciscan rocks. On the west side of the bay, some wells and springs are developed within the fractured and weathered granitic rocks.

SURFACE WATER

Tomales Bay State Park contains several permanent and ephemeral streams, ponds and impoundments. The sub-watersheds within the Tomales Bay SP properties contain a number of minor streams. Although Tomales Bay is a large estuary, smaller estuaries found at the outflow of these minor drainages are an important feature of the park's surface waters, providing dynamic habitat for wildlife and a source of nutrients for the fisheries and mariculture.

The natural hydrology of drainages in the park has been altered by road construction, agricultural use, and development. On the east side of the bay, the drainages were impacted by railroad construction in the 1870's, and have been further modified by the construction of Highway 1. Runoff that originally occurred via sheetflow and smaller channels has been concentrated by highway ditches and culverts, creating larger, unnatural channels. These larger channels have connected waters that were once separate systems. In the Millerton Point Area, an artificial channel has formed an estuary at the confluence with the bay.

The lower reach of Millerton Gulch, the low-lying estuary at Tomasini Point, and the lower reaches of the drainages that enter the bay at Shell Beach and Indian Beach fall within the 100-year floodplain.

Wetlands

Tomales Bay State Park contains several ponds and many springs and seeps. The ponds are both natural and artificial. For example, the Heart's Desire Area has a natural seasonal pond at Indian Beach, and a permanent artificial pond that is a part of an abandoned water delivery system. The Inverness Area has one pond and several springs and seeps in connection with the creek drainages. In the Millerton Tomasini Area, on the east side of Hwy. 1, there is a small seasonal pond, which was a water impoundment for cattle, and a long seasonal step pool cascade, which feeds the drainage into the estuary at Tomasini Point. These scattered impoundments and ponds form an important network along with the streams and estuaries for the maintenance of wildlife populations.

Streams

The Heart's Desire Area has four perennial unnamed streams. The headwaters originate along the ridge near Pierce Point Road and drain into the bay at various points including Indian Beach, Heart's Desire Beach, Pebble Beach, Shallow Beach (privately owned), and Shell Beach. These riparian systems have V-shaped channels with granitic bed substrates of various sizes and typically support an alder overstory with an understory of shrubs, rushes, and sedges.

The Inverness Area has a number of unnamed ephemeral and permanent streams. These streams have their headwaters at the top of Inverness Ridge and drain into the bay. The steep terrain and land development have made portions of these drainages susceptible to flash storm events. Redwood Creek, south of the town of Inverness, sustained a major landslide (debris flow) in 1982. Shortly afterwards, State Parks the rehabilitated damaged areas on State Park land.

The Millerton Area has several small drainages and three larger streams. One of these streams, Millerton Creek, is designated in the RWQCB basin plan as an important "surface water body". State Parks ownership includes an important stretch of this creek from above Highway 1 to the bay outflow where it forms a saltmarsh estuary. Historically, there have been water quality issues for this stream due to elevated *E. coli* bacterial levels. Presumably this is related to upstream land uses including cattle grazing, an open rock quarry and the Borello Sewage Ponds.

Both the Cyprus Grove and Marconi Cove Areas have one stream flowing though them with an outlet at the bay.

Estuaries

Estuaries occur at the outlet of many of the small tributary streams on park property. Most of these systems are tidal saltmarshes, including tidal flats. On the east shore these consist largely of pickleweed dominated systems. At Hearts' Desire Beach, the drainages are characterized by brackish marshes that transition into saltmarshes at the

bay edges. At Indian Beach and Shell Beach, there are a few areas of riparian forest that grade into freshwater marsh at the outlets. Important estuaries exist in several locations in the Millerton Area. The largest estuary occurs at the head of Tomasini Point. The nutrient and salinity levels of these estuaries fluctuate with the tidal exchange and nutrient cycling of the Tomales Bay, and are also influenced by the amount of fresh water surface runoff. Estuaries are valuable habitat for fish, rearing habitat for anadromous fish, bird breeding and foraging. They also function to improve water quality through filtering and recycling of nutrients and are critical to the food chain plankton base for bivalves including commercial oysters.

WATER SUPPLY

The water source for the park residence at Millerton Point is a well located on the east side of Highway 1. Another well is sited further upslope in a small drainage and feeds an old water impoundment constructed by the former landowners for cattle.

On the west side there are a number of wells and springs that are developed within the granitic rocks along Inverness Ridge. Undeveloped property in this area, including state park lands, serves the important function of recharging the groundwater supply for this watershed.

The water source for the park residences and Heart's Desire Beach is a well located near the "boneyard" maintenance area. Water tanks are used to insure adequate supplies. There are several other known springs within the park in the Heart's Desire Area.

WATER QUALITY

As land managers in the Tomales Bay watershed the California State Parks is responsible for complying with the regional water quality objectives and TMDLs (Total Maximum Daily Loads) established by the San Francisco RWQCB. Tomales Bay has been listed by the State of California (and on a federal 303(d) list) as an impaired waterbody due to pathogens, nutrient levels, mercury, and sediment. TMDLs are established as part of a Basin Plan to address the causes of pollution and bring the waterbody into compliance levels. TMDLs have already been set for pathogens (2002), with remaining problems to be addressed by 2007. The causes of the water quality impairments to Tomales Bay are discussed below:

Pathogens

The contributing factors involved in elevated levels of pathogens introduced to the waters of Tomales Bay are substandard or failing septic systems, agricultural wastes, boating and other recreational uses, urban runoff, and natural populations of wildlife (primarily large numbers of migrating and resident birds). Some bacteria are a natural component of marine and aquatic food webs, but human activities can add pathogenic bacteria and viruses to Tomales Bay waters. Certain types of bacteria pose a risk to public health from water contact activities or consumption of shellfish. *Fecal coliform*

bacteria are the indicator species used to determine water quality in shellfish growing waters like Tomales Bay. Shellfish have the ability to ingest and concentrate pathogenic bacteria and viruses from surrounding waters and pass them to humans. Because of the risk of human illness due to sewage discharges into Tomales Bay boaters are encouraged to dispose of onboard sewage at shore-based facilities (portable toilets and pump stations).

Possible contributing factors on state park lands, which need further investigation and study, include: 1) public restroom facilities and septic systems, especially in flood and riparian zones, 2) historic residential septic systems, 3) current residential leachfields, and 4) the residuals from a dairy in the Millerton Area.

Nutrients

Contributing factors to high nutrient levels include the above septic system problems as well as factors involved in bay nutrient mixing and seasonal rain flows.

Sediment

According to the Tomales Bay Watershed Plan, sedimentation is occurring at a rate is 5mm/yr in the bay. Studies show that the highest amounts of sedimentation occurred between 1930 and 1960 as a result of various human activities. The main contributors to the rapid sedimentation have been logging, stock pond creation, agricultural practices, land clearing, grading, and road construction. The construction of a railroad through current State Park lands on the east side in the 1870's isolated small coves, causing them to infill and become salt marshes. This is especially evident at Tomasini Point where the old railroad levee can still be seen.

Mercury

No known sources of mercury contamination originate from State Park property or from drainages that pass through State Park property. High mercury levels are a result of old mining operations in the Walker Creek drainage. The resulting effects of mercury contamination are widespread within Tomales Bay. Not only is commercial and sports fishing effected, but studies indicate evidence of unusual levels of mercury throughout the food chain such as the leopard sharks, bat rays, and diving ducks which feed on shellfish and crabs. The California Department of Health Services (per March 15, 2004 letter) states that they have no knowledge that commercial shellfish in Tomales Bay are contaminated with mercury at high enough levels to warrant human health advisories such as those issued by the Department of Fish and Game for the consumption specific fish species.

Water Quality Monitoring

A number of federal and state agencies are currently monitoring the water quality in the bay. State Parks tests the west shore beach waters and the septic systems for these facilities. National Parks has instituted a regular program of water quality monitoring. A

bay monitoring program also exists to track the health of the bay by measuring many parameters such as temperature, salinity, suspended sediment, depth, and micro- and macro-invertebrates. These long-term studies have permanent sampling stations located off Millerton and Tomasini Points as well as off the Cyprus Grove Area. In addition, a state mussel watch monitoring station is located in the bay and regular water quality testing is conducted to ensure the health of shellfish for public consumption. The California Department of Health Services Preharvest Shellfish Program is responsible for monitoring activities of both shellfish and shellfish growing water quality in commercial shellfish growing areas. The RWQCB has developed a TMDL Pathogen Plan for the bay and monitoring is conducted to ensure compliance.

PLANT LIFE

Tomales Bay State Park is located on the eastern side of the Point Reyes peninsula within the San Francisco Bay area floristic sub-region of the central western California floristic region (Hickman, J., ed., 1993). The floristic composition and diversity within the park is influenced by its proximity to the Pacific Ocean, existing topography, and the presence of the San Andreas fault under Tomales Bay. Seismic activity along the San Andreas fault is responsible for the presence of Tomales Bay and for a raised water table in the vicinity of the Bay. Movement along the fault has resulted in the occurrence of different geologic blocks, and therefore different soil substrates, on either side of Tomales Bay. The steep slopes on the western side of Tomales Bay are dominated by the closed-cone Bishop pine, hardwoods such as California bay, California wax myrtle, and coast live oak, as well as several chaparral species. Conversely, vegetation on the eastern side of the Bay is pre-dominantly annual grassland and coyote brush on coastal terraces.

PLANT COMMUNITIES

See **Appendix F: Plant Communities Classifications Crosswalk.**

Tomales Bay State Park supports 21 plant communities as described in *A Manual of California Vegetation* (Sawyer and Keeler-Wolf, 1995). A plant communities map for the area including Tomales Bay State Park has been prepared for the National Park Service and is in the process of being finalized. The aerial photos used to create this map were taken in 1994 prior to the Mount Vision fire. Plant communities were named using the Sawyer & Keeler-Wolf classification system. The polygons labeled as “mapping units” refer to those plant assemblages that were not classified using the Sawyer & Keeler-Wolf system because it was too difficult to determine their composition to species level from the aerial photos. The Sawyer & Keeler-Wolf classification system is cross-walked to the Holland classification system and the California Department of Fish and Game’s (CDFG) Wildlife Habitat Relationships (WHR) classification system in Appendix F. Dominant plant communities within Tomales Bay State Park are the Bishop pine alliance on the western side of Tomales Bay and the California annual grassland alliance with native component (i.e., coastal terrace prairie) on the eastern side of Tomales Bay.

Of the 21 plant communities within Tomales Bay State Park, two are listed in the CDFG's California Natural Diversity Database (CNDDDB, 2002) as sensitive plant communities. Those communities are coastal terrace prairie and northern coastal salt marsh under the Holland classification system.

SENSITIVE PLANT COMMUNITIES

Coastal Terrace Prairie

Coastal terrace prairie is described as “a dense, tall grassland (to 1m tall) dominated by both sod and tussock-forming perennial grasses. Most stands are quite patchy and variable in composition...” (Holland, 1986). This community is labeled “Introduced Perennial Grassland and Pacific Reedgrass Alliance” (Sawyer & Keeler-Wolf, 1995) on the Plant Communities Maps. The distribution of coastal terrace prairie is discontinuous from Santa Cruz County north into Oregon. This community is found in the Millerton Area and the North Marshall Area of the park. Soils are sandy loams on marine terraces near the coast at elevations ranging from nearly sea level to approximately 700-1000 feet within the coastal fog zone. Characteristic plant species include bentgrass (*Agrostis capillaris* – non-native), vernal grass (*Anthoxanthum odoratum* – non-native), sea pink (*Armeria maritima* var. *californica* – native), Pacific reed grass (*Calamagrostis nutkaensis* – native), California oatgrass (*Danthonia californica* var. *americana* – native), hairgrass (*Deschampsia cespitosa* ssp. *holciformis* – native), alta fescue (*Festuca arundinacea* – non-native), red fescue (*Festuca rubra* – native), and velvet grass (*Holcus lanatus* – non-native).

Northern Coastal Salt Marsh

Northern coastal salt marsh is described as a highly productive plant community composed of salt-tolerant herbaceous and semi-shrubby plant species forming moderate to dense cover up to 1m tall (Holland, 1986). This community is labeled as both the “Saltgrass Alliance” and the “Pickleweed Alliance” (Sawyer & Keeler-Wolf, 1995) on the Plant Communities Maps. Most of the species that occur in northern coastal salt marsh are winter-dormant. This plant community is found along the coast in the sheltered inland margins of bays, lagoons, and estuaries. At Tomales Bay State Park, this community is found in the Heart's Desire Area and the Millerton Area. It occurs at sites that are affected by regular tidal fluctuations for at least a portion of the year. Representative species include dodder (*Cuscuta salina* - native), saltgrass (*Distichlis spicata* - native), spikerush (*Eleocharis parvula* - native), frankenia (*Frankenia salina* – native), gumplant (*Grindelia* sp.), *Jaumea carnosa* - native, rush (*Juncus lesueuri* – native), statice (*Limonium californicum* -native), seaside plantain (*Plantago maritima* - native), cinquefoil (*Potentilla anserina* ssp. *pacifica* - native), pickleweed (*Salicornia virginica* - native), pacific cordgrass (*Spartina foliosa*- native), and arrow-grass (*Triglochin maritima*). Northern coastal salt marsh occurs along the coast from the Oregon border south to Point Conception.

MAP 5A: PLANT COMMUNITIES-NORTH PARK AREAS

MAP 5B: PLANT COMMUNITIES-INVERNESS PARCELS

SENSITIVE PLANT SPECIES

See **Appendix G:** *Sensitive Plant Species and Communities known to occur within Tomales Bay State Park* and **Appendix H:** *Sensitive Plant Species and Communities potentially occurring within Tomales Bay State Park*.

Sensitive plant species are those that occur on the U.S. Fish and Wildlife Service (Federal) list, the California Department of Fish and Game (State) list of special plants (i.e., Rare, Endangered, or Species of Concern), or the California Native Plant Society's (CNPS) list. The CDFG California Natural Diversity Database (CNDDDB) was queried for known occurrences in the vicinity of the park, and the CNPS Electronic Inventory of Rare and Endangered Vascular Plants of California was queried for species potentially occurring within the park. In addition, the local chapter CNPS plant lists for the park were reviewed for information on the occurrence of sensitive plant species within Tomales Bay State Park.

There are 15 sensitive plant species that are known to occur within Tomales Bay State Park. Six of the 15 plant species are listed as Federal Species of Concern. Plant surveys were completed within the park and a plant list compiled by the Marin Chapter of the California Native Plant Society on April 4, 2000 and March 27, 2001. In addition to the 15 sensitive plant species known to occur in Tomales Bay State Park, another 35 sensitive plant species have the potential to occur there. Suitable habitat exists within park boundaries for all these species.

EXOTIC PLANT SPECIES

See **Appendix I:** *Non-Native Plant Species known to occur within Tomales Bay State Park*.

Exotic plants are those species that are not part of the local native flora. They are species that are typically adapted to areas that have been disturbed in some way, such as along roads and in grazed areas. They are often fast growing species with a tolerance to a wide range of environmental conditions that facilitates their spread and establishment into new areas. Some exotic plant species are particularly invasive and can cause extensive degradation to natural plant communities.

There are 126 exotic plant species occurring within Tomales Bay State Park, according to the plant lists compiled by the Marin Chapter of CNPS in 2000 and 2001. The California Invasive Plant Council (CallPC) list of Exotic Pest Plants of Greatest Ecological Concern in California was referenced for the exotic plant species that are known to occur within the park. The CallPC list is divided into 6 categories based upon how widespread the species is and how much of a problem it is for California native ecosystems. Appendix I is a list of the exotic plant species within Tomales Bay State Park and the CallPC category each species has been placed in, if any.

Of the 126 exotic plant species in the park, 27 of them are listed by CallPC as threats to California wildlands and another 6 were "considered but not listed". Six of the exotic plant species at Tomales Bay State Park are in CallC's List A-1 category (i.e.,

widespread pests that are invasive in more than 3 regions identified in *The Jepson Manual: Higher Plants of California*). One exotic plant species is on List A-2 (i.e., regional pests that are invasive in 3 or fewer regions identified in *The Jepson Manual*). Twelve exotic plant species are in the List B category (i.e., wildland pest plants of lesser invasiveness or invasive pest plants that spread less rapidly and cause a lesser degree of habitat disruption than List A plants). Five of the exotic plant species are in the “Need More Information” category and three are in the “Annual Grasses” category (i.e., annual grasses that are abundant and widespread in California and pose major threats to wildlands).

The exotic plant species of most concern within Tomales Bay State Park are those in CallPC’s List A-1 and List A-2 categories. The A-1 List species include the hottentot fig, scotch broom, cape ivy, blue gum eucalyptus, French broom, and Himalayan blackberry. The single species on the A-2 List is European pennyroyal. These species in particular should be an important focus of weed eradication or control efforts.

In addition to these species, the hybrid cordgrass (*Spartina* spp.) has been recently found in Tomales Bay and threatens the native cordgrass (*Spartina foliosa*). This noxious weed is a hybrid between two or more species of *Spartina*. The offspring of these crosses are reproductively superior to the native and parent species and are highly invasive in marshes and mudflats. Several *Spartina* spp. are on CallPC’s Red Alert List (i.e., species with potential to spread explosively; infestations currently restricted). If these or hybrid species are found within Tomales Bay State Park, immediate action should be taken to eradicate them. Smooth cordgrass (*Spartina alternifolia*), which has not yet been reported in the park, is on the CallPC’s List A-2.

ANIMAL LIFE

See **Appendix J: Sensitive Wildlife Species** occurring in Tomales Bay State Park.

The Point Reyes peninsula and the Tomales Bay watershed support a rich mosaic of diverse wildlife habitats. The watershed is reported to have sightings of 470 species of birds and is home to important threatened and endangered species such as northern spotted owl, coho salmon, steelhead trout, California freshwater shrimp, and California red-legged frogs.

WILDLIFE HABITATS

Tomales Bay State Park includes a sampling of the natural communities and abundant wildlife found in the surrounding watershed. The park is home to a large number of special-status species. Wildlife habitat types, as classified by the California Wildlife Habitat Relationships System (see CWHR map) include: Fresh Water Emergent Wetland (fresh water marsh), Closed Cone Pine-Cypress (Bishop Pine Forest), Annual Grassland, Coastal Oak Woodland, Saline Emergent Wetland (salt marsh), Coastal Scrub, Riverine, Lacustrine, Estuarine, and Marine habitats (which includes sandy beaches, intertidal zones, mud flats and eel grass beds).

HABITAT LINKAGES

Habitat linkages are lands that link two or more larger habitat areas. These “biocorridors” provide for the protected movement of wildlife between areas. Two examples of habitat linkages in Tomales Bay State Park and linkages to habitats on neighboring lands include:

- Connection of Bishop Pine forests on State Park lands with nearby forests on National Park Service land via a variety of natural habitat types allowing for the unrestricted movement of the northern spotted owl.
- Stream corridors for aquatic species, connecting Tomales Bay to upper watershed tributaries.

SENSITIVE ANIMAL SPECIES

Sensitive animal species are those that are found on the U.S. Fish and Wildlife Service (USFWS) Species Lists and the California Department of Fish and Game (CDFG) list of special animals. These species are designated Endangered, Threatened, or Species of Special Concern by the USFWS or CDFG. Also included here are species of local concern due to small populations, reduced habitat, or restricted range. Potential habitat exists within Tomales Bay State Park for 11 Federal Threatened (FT) or Endangered (FE) species and 7 State Threatened (ST) or Endangered (SE) species, 6 of which are known to be present. In all, there are 80 special status sensitive species with potential habitat in the park, 55 of which are birds. There have been no individual species inventories conducted by California State Parks, although the National Park Service and Point Reyes Bird Observatory have conducted surveys and monitoring in some areas of the park.

Invertebrates

California freshwater shrimp (*Syncaris pacifica*) (FE, SE) are found in pools and low-gradient streams among exposed live tree roots in undercut banks, or beneath overhanging vegetation. Recent surveys have found shrimp in several tributaries outside the park, and potential habitat exists in streams in the park.

Tomales asellid or isopod (*Caecidotea tomalensis*) and the California brackish water snail (*Tryonia imitator*) are species of local concern. The Tomales isopod inhabits freshwater ponds and streams using dense mats of marsh pennywort (*Hydrocotyle spp.*) and decaying leaves for attaching eggs. The California brackish water snail is found in estuaries. Little information is known about either species within the park.

Myrtle’s Silverspot butterfly (*Speyeria zerene myrtleae*) (FE) uses coast dunes, scrub, and grassland habitats and is now known only from a few sites in northern Marin County. Potential habitat exists on the east shore of the bay. No studies have been conducted to determine if the species is present within the park.

Fish

Coho salmon (*Onchorynchus kisutch*) (FT, SE). The salmon pass through Tomales Bay during their migration to spawning grounds in Olema and Lagunitas Creeks. While this species is not known to inhabit the park, there are historic accounts of salmon runs in bay tributary streams, such as Millerton Gulch.

Steelhead trout (*Onchorynchus mykiss*) (FT), like Coho salmon, spawn in Olema and Lagunitas Creeks and migrate through Tomales Bay. The tidewater goby (*Eucyclogobius newberryi*) (FE, California Species of Special Concern (CSC)), and the Tomales roach (*Lavinia symmetricus*) (CSC) are found in Tomales Bay estuaries. The tidewater goby has been found within the park, and surveys are needed to identify all occupied habitat. The Tomales roach may be present within the park.

Amphibians

The California red-legged frog (*Rana aurora draytonii*) (FE, CSC) inhabits wetlands, marshes, ponds and creeks. The frog has been reported in the Heart's Desire area, and probably also inhabits wetlands and streams in other areas of the park. Critical habitat was designated for the California red-legged frog in Marin County, which encompasses Tomales Bay State Park. The foothill yellow-legged frog (*Rana boylei*) (FSC, CSC) inhabits fresh water streams, and can be found in other wetland habitats. The yellow-legged frog has been reported in the Inverness area, and potential habitat exists in all permanent streams within the park.

Reptiles

The northwestern pond turtle (*Clemmys marmorata marmorata*) (FSC, CSC) inhabits freshwater ponds and slow moving streams. It prefers ponds with emergent basking sites such as logs or rocks. Although aquatic, pond turtles leave the aquatic site to reproduce, to aestivate, and to overwinter. While there is only one reported sighting within the park, all ponds with nearby streams provide suitable habitat. No surveys for pond turtles have been conducted.

MAP 6A: WILDLIFE HABITATS-NORTH PARK AREAS

MAP 6B: WILDLIFE HABITATS-INVERNESS PARCELS

MAP 7A: NATURAL RESOURCE SENSITIVITY-NORTH PARK AREAS

MAP 7B: NATURAL RESOURCE SENSITIVITY-INVERNESS PARCELS

Birds

Tomales Bay State Park supports a community of year-round residents and summer breeding birds and provides wintering habitat for many species. There have been reported sightings of 470 bird species, of which 220 are thought to be resident in the watershed, with 55 listed as sensitive species. The Tomales watershed is also an important resting and foraging area for migrating birds on the Pacific flyway

Tomales Bay is a foraging ground for migrating shorebirds and is recognized as a wetland of regional importance by the Hemisphere Shorebird Reserve Network. Sensitive species include the black oystercatcher (*Haematopus bachmani*), and the long-billed curlew (*Numenius americanus*) (Federal Species of Concern (FSC), CSC).

Seabirds are most abundant on the open water of the bay and many forage in the eel grass beds off Millerton Point and near Cypress Grove; others species are attracted by the large herring run. The Brown pelican (*Pelecanus occidentalis californicus*) does not breed in the area, but is abundant in late summer and is seen May through December. Pelican populations have increased since the ban of DDT, but may be subject to continuing threats including pesticide contamination.

Most of the sensitive wading birds are resident all year; however the known rookeries are located outside the park. California black rail (*Laterallus jamaicensis coturniculus*) (FSC, ST) has been seen at Tomasini Point and potential nesting habitat is found in the estuaries on the east shore.

Land birds use a variety of habitats within the park. Riparian areas are important to insect-eating migrants. Grasslands support ground nesting birds and insect and seedeaters. Shrub habitats are used by nesting birds and as prime habitat for wintering such as the loggerhead shrike (*Lanius ludovicianus*) (FSC, CSC). The saltmarsh common yellow throat (*Geothlypis trichas sinuosa*) (FSC, CSC) and the tri-colored blackbird (*Agelaius tricolor*) (FSC, CSC) may be found in marsh habitats in the park.

Raptors use grasslands, coniferous forest, tidal flats, marshes and bay waters (for fish). The abundance of raptors depends on the fluctuating populations of rodents and fish, and shows a wide variation over the years, according to local studies. Tomasini Point provides grassland habitat for foraging raptors.

The northern spotted owl (*Strix occidentalis caurina*) (FT) is a resident of forested habitats in the Inverness and Heart's Desire areas of the park, where they occupy large areas of mature forest. The short-eared owl (*Asio flammeus*) (CSC), long-eared owl (*Asio otus*) (CSC), and burrowing owl (*Athene cunicularia*) (FSC, CSC) have been seen on the eastern shores of the bay. Burrowing owls and short-eared owls winter on Tomasini Point.

The American peregrine falcon (*Falco peregrinus anatum*) (FSC, SE) is found in the park in the winter. Bald eagles (*Haliaeetus leucocephalus*) (FE, SE) have increased in numbers in Marin County. As bald eagle populations continue to expand, Tomales Bay

may provide breeding sites in the future due to favorable habitat and the availability of food.

Mammals

Potential habitat exists for the saltmarsh harvest mouse (*Reithrodontomys raviventris*) (FE) in the salt marshes of the bay. The Point Reyes mountain beaver (*Aplodontia rufa phaea*) (FSC, CSC) may be present in the Inverness and Heart's Desire areas of the park, in densely vegetated riparian areas. One burrow location has been reported in the park and it is likely that others exist, however no surveys have been conducted.

The Point Reyes jumping mouse (*Zapus trinotatus orarius*) (FSC, CSC) has a patchy distribution within the area. Suitable habitat includes grassy wet meadows adjacent to coniferous forest, low-growing chaparral, marshes, and riparian alder communities. Surveys for Point Reyes jumping mouse are needed in the park.

Exotic Animal Species in the Park

In California, invasion of exotic species is an important threat to the survival of endangered species. Exotic animals can negatively impact native species through competition and predation. There is no evidence of widespread problems from exotic animals in the park today, but if populations increase, serious problems may arise in the future.

Feral domestic cats roam areas of the park and may prey on black rails and other birds. Turkeys, which are not native to this area, have been sighted in the park and may have a negative effect on native species. Herds of Fallow and Axis deer residing in the "L" Ranch area of Point Reyes National Seashore adjoining the Heart's Desire Area of Tomales Bay State Park may negatively impact native vegetation and increase erosion in the park.

Tomales Bay marine ecosystems may be impacted by introduced invertebrates. Exotic marine and estuarine species, such as the green crab, may negatively impact native marine life along the park's intertidal edges.

INTERTIDAL AND MARINE LIFE

Tomales Bay is a large estuary system where fresh water and saltwater mix, creating a rich habitat for many species. These habitats, which extend from the shore to the subtidal zone, include fresh, brackish and saltwater marshes, sandy beaches, rocky shores, creek deltas, mud flats, and open waters which fluctuate seasonally in salt content. The bay is thought to support over a thousand invertebrate species. Rich in nutrients, plankton, foraminifera and macroinvertebrates, the seaweed and eel grass beds support habitats for juvenile salmon, a commercial herring fishery, birds, and marine mammals.

The Intertidal Zone

Intertidal mud and sand flats support a diversity of benthic plants and animals. Marsh plants contribute to the organic food source and support microbial activity in the estuaries. Benthic animals such as worms, snails, clams, and crabs, live in these habitats and provide an important food source for a variety of marine mammals, birds, and fish. The intertidal zone also includes fine grain sandy beaches at Heart's Desire Beach, Indian Beach, Pebble Beach, and Shell Beach. These small beaches provide shelter and food for foraging shorebirds.

The Open Waters of Tomales Bay

Eel grass beds occur from low tide to a depth of 8-10 feet, and are located off Millerton Point and Heart's Desire Beach. Submerged plants form a complex habitat for many invertebrates, fish, birds, and marine mammals.

Mariculture

The Tomales Bay Oyster Company, which leases off shore lands at Millerton Point and Tomasini Point, grows several non-native species of oysters, clams, and mussels. Oyster cultivation provides habitat for many marine species and allows the filtration of bay waters, increasing water clarity and benefiting ecosystems such as the eelgrass beds. However, this habitat also displaces natural habitat and some native species. Other potential negative effects of mariculture include the introductions of non-native species and diseases.

Commercial and Recreational Fisheries

Tomales Bay once supported large coho salmon and steelhead trout fisheries. These are now closed (except for the catch and release of steelhead in Walker Creek). The current primary commercial fishery in Tomales Bay is Pacific herring (*Clupea pallasii*). The modern herring fishery is almost exclusively for the Japanese herring roe market. Smaller commercial fisheries in Tomales Bay include halibut, perch and live-bait. A few commercial fishermen occasionally take perch, anchovies for live-bait and sardines for sport fishing operations in Bodega Bay.

Recreational fisheries in the Bay include Dungeness and rock crabs, jacksmelt, perch, sole, striped bass, sturgeon, sharks, and rays. However because of detected mercury levels, consumers are cautioned by health officials not to exceed recommended consumption levels for sport-caught halibut, perch, smelt, sharks, and rays.

Clamming, while not as productive as in historic times, is still a popular recreational activity. The horseneck (gaper clam) is still a favorite for clam digging. Washington clams were once found in the park in large numbers. It is thought that the population was all but destroyed by storm events in 1982 that deposited large amounts of sediment on beaches where they were once found. Mussels are also harvested by park users. An

annual mussel quarantine for paralytic shellfish poisoning (PSP) is put into effect from May to October. Commercial oysters are not included in the annual PSP quarantine. The commercial shellfish growers and the Department of Health Services monitor shellfish throughout the year for both PSP and *coliform* bacteria. Commercial oyster closures due to *coliform* are typically during the winter wet weather months and relate to rainfall amounts in the watershed.

AESTHETIC RESOURCES

INTRODUCTION

Aesthetics are commonly defined as human sensory impressions, including sight and sound. Inherent in the founding and development of California State Parks is the concept of aesthetics. This has been especially true in the establishment of Tomales Bay State Park.

Aesthetic impressions come through the senses of sight, hearing, smell, touch, taste, and a general synthesis of these fundamental senses. Intuition also plays a part. The far-reaching senses of sight and hearing are the primary conduits by which many visitors experience the park. Included in this section are commonly experienced scenic and auditory resources at Tomales Bay State Park. Discussion of the park's aesthetics also includes the experience of *spirit of place*, which was presented in the Introduction section of this plan.

SCENIC RESOURCES

Scenic resources can be defined as the general appearance of a place and the features of its views or landscapes. They consist of both biophysical elements (landforms, water, and vegetation) and cultural, or manmade, elements. The concepts of "beautiful" or "unsightly" become, in varying degrees, part of an individual's perception of a scene. Most park visitors would agree that certain elements are necessary for a positive visual experience in this kind of park, based primarily on undeveloped natural conditions.

Scenic quality is an important and valuable resource, especially on public lands. Many people have high expectations of scenic quality when visiting California State Parks. The scenic qualities of the Tomales Bay region are important not only for out-of-town visitors to the park, but to local residents as well. The preservation, protection, and enhancement of visual quality in this area is extremely important on a local, regional, and state level, as indicated in local and regional land use plans (including the Marin Countywide Plan and Local Coastal Plan). Visual quality is a major public issue in this locality.

Scenic resources are a primary aesthetic consideration in defining an overall, unique spirit of place for an individual park, as well as for specific areas within the park. Tomales Bay State Park is recognized for its spectacular natural beauty and panoramic

views from many areas of the park, especially at the shoreline of the bay and in areas of higher elevation.

The seven separate parcels that comprise Tomales Bay State Park occur in two very distinct areas that are separated by the waters of Tomales Bay. Those on the west side of Tomales Bay include the Heart's Desire Area and Inverness Area parcels; parcels on the east side of Tomales Bay include the North Marshall, Marconi Cove, and Millerton Areas. These two sides of the bay have distinct characters that are of value to the visitor and are worth preserving and enhancing.

OVERVIEW OF SCENIC CHARACTER

The most important visual resources of Tomales Bay State Park are the many panoramic views available from within the park looking outward to Tomales Bay and its surrounding landscape. The bay itself commands the visual focus of the entire region, and profoundly affects the visual quality and human experience of its surrounding landscape.

There are a wide variety of scenic resources within Tomales Bay State Park and the two distinct landscape types on either side of the bay. The landscape character on the western side of the bay ranges from the shady and cool forests of Bishop pine, California bay, Coast live oak, and California wax myrtle, to the alder dominated riparian corridors along meandering creeks and warm sandy beaches. There are many panoramic views of the bay and its abundant wildlife from the west side, as well as views of the eastern parcels of the park across the bay, adjacent private property, and National Park Service property.

The eastern side of the bay is characterized by coastal terraces of grassland and coyote brush, and by the grass-covered rolling hillsides containing pockets of California bay trees in the moist, shady canyons. The parklands on this side of the bay also offer spectacular panoramic views of Tomales Bay, Inverness Ridge, and the villages of Inverness and Inverness Park on the west side of the bay.

VISUAL RESOURCES AND SCENIC CHARACTERISTICS

Vista Points/Panoramic Views

Scenic vistas from within the park provide expansive views of the park, the surrounding landscapes, and Tomales Bay. Vista points and panoramic views are found primarily along areas of higher elevation and open vegetation along the roads and trails in the park or at the edge of Tomales Bay.

Panoramic views of and across Tomales Bay are available from the beaches and picnic areas in the Heart's Desire Area (including one picnic area at a designated "Vista Point"), the ridgetops in the Inverness Area, and all of the park parcels on the eastern side of the bay.

Special Landscapes

There are a variety of unique and especially important scenic areas throughout the park, including the Bishop pine forest, estuary/marsh complexes, and beaches.

Ephemeral Conditions

Ephemeral conditions are defined as those that are constantly changing, producing effects that disappear soon after appearing. There are several important climatic and environmental ephemeral conditions that occur regularly at Tomales Bay State Park that contribute to visual impressions and to the visitor's experience of the park. These include atmospheric, tidal, and seasonal changes.

Atmospheric Phenomena

Tomales Bay State Park is in a marine environment profoundly influenced by the presence of the Pacific Ocean. The ocean extends its influence into the long rift that forms the bay and the bay influences the atmosphere in the park.

One effect of the marine environment is the formation and continual movement of fog over the water, especially in summer. The fog obscures views with a cool, misty quality that also muffles sound and produces a sense of quiet. Under these conditions, one is compelled to pay attention to immediate surroundings, rather than to the vistas and open landscapes seen in clear conditions. The beaches in Tomales Bay State Park are sometimes warm, sunny refuges when the majority of the coastal peninsula is veiled in fog. Often, the steep topography of Inverness Ridge will block coastal fog from moving over the ridgeline to the shores of Tomales Bay. The parcels on the east side of the bay are much less protected than those on the west side, and often experience windy conditions that allow less fog and more opportunities for clear, bright vistas.

On sunny days, the bay creates a bright atmosphere of reflected light that can lend a dazzling effect to views around the bay. And the relative lack of development and nighttime traffic around the bay creates a very dark sky at night, with wonderful opportunities for stargazing.

Tides

Tidal fluctuations are another variable element in this landscape. Daily tidal fluctuations result in important visual transformations in the landscape, from bay water to large expanses of mudflats. This condition is especially pronounced at Millerton Point and in shallower areas in the southern part of the bay.

Seasonal Changes

Along with a variety of weather conditions, the changing seasons contribute to a transformation of vegetation around the bay in form, texture, and color. The most

obvious are the seasonal displays of wildflowers and the changing colors of deciduous vegetation and grasses, especially pronounced in the spring and autumn.

Visual Qualities of Existing Development

Park facility development is concentrated in the Heart's Desire and Millerton Point-Tomasini Point Areas. Developments such as comfort stations, information kiosks, and entrance kiosks, parking lots, roads, trails, picnic areas, campgrounds, and overhead utility lines affect the viewshed. The Marconi Cove parcel was formerly a private campground and remnants of this prior use remain, such as a concrete boat ramp and some structures. The North Dream Farm property has several unmaintained structures, including a residence, a barn, and some trailers.

THE PARK'S DISTINCTIVE VISUAL AREAS AND VIEWSHEDS

In addition to the differences between the environments of the western and eastern shores of the bay, there are three separate areas within the park that have distinctive, well-defined visual characteristics based on landform, vegetation, and development characteristics (including the amount of development, type of use, and facilities).

The Heart's Desire Area

This area is comprised of a variety of scenic features, including pocket beaches, shady picnic areas, wetlands, and a Bishop pine forest with a mix of fragrant California bay, wax myrtle, and coast live oak. The mix of vegetation adds an ever-changing variety of color, form, and texture throughout the seasons.

As the visitor travels into the Heart's Desire Area to the ranger contact station/office, the road curves through the forest, and the visitor realizes a sense of anticipation and arrival at a special place. The road eventually terminates at one of two parking areas near Heart's Desire Beach, where one can see across the bay as well as experience the intimate setting of the beach's natural resources. A trail heads north through the forest and leads to Indian Beach, a wide strand with an estuary and panoramic views of the bay and the landscape of the eastern shore and hillsides.

Another trail from Heart's Desire Beach leads south to a picnic area and vista point on a bluff overlooking the bay, affording beautiful views of the beach and opposite shore. The picnic area itself is heavily used and does not have high visual quality, although the views from this location do. Following the trail further through the pine forest the visitor will approach Pebble Beach and then Shell Beach, also small and intimate in scale, but with opportunities to view the bay and the landscapes beyond.

Manmade elements seen in the Heart's Desire Area include the entrance road and gate, utility poles and lines, informational and directional signs, the ranger contact station/office, an informational kiosk, parking lots, fencing, trash and recycling receptacles, picnic tables, and comfort stations. Staff residences, maintenance facilities,

and a maintenance storage yard are also in this area, but are hidden from the visitor's view.

The Inverness Area

This area is comprised of very steep topography covered predominately with forest. A few small drainages flow down the steep hillsides to Tomales Bay. Lush riparian vegetation is associated with these small streams. There are no visitor facilities in this area but there are dilapidated structures in the lower Dream Farm site, including a residence, two office trailers, and a barn. Views from the top of Inverness Ridge are spectacular with a panorama of almost the entire 12-mile length of Tomales Bay.

The East Side Parcels

The east side parcels include the Millerton Point/Millerton uplands/Tomasini Point Area, Marconi Cove, and North Marshall. These areas are characterized by expansive views of Tomales Bay. Coastal grasslands and scrub vegetation dominate these east side properties, with pockets of California bay in the shady hillside drainages. Low lying areas support estuaries and the tidal influence provides acres of mudflats at low tides. The dominant colors in this landscape change dramatically with the seasons. Winter rains initiate the bright green of newly sprouted grasses and an array of springtime wildflowers. The golden hills of dry grasses characterize the summer and autumn seasons. In all seasons, the frequent breezes blowing through the grasses add a sense of movement to the landscape.

Manmade elements in this area include Highway 1, roadside pullouts, parking lots, day use facilities, picnic tables, informational/interpretive kiosks, split rail fencing, trails, and an employee residence. Most of these elements complement the scenic quality by harmonizing with the natural environment primarily through the use of natural/native building materials, siting structures and other facilities unobtrusively, and the use of colors that blend with the existing landscape.

The Marconi Cove parcel contains structures and a damaged concrete boat ramp from former camping uses by a previous owner.

All of the parcels on the east side of the bay offer panoramic views of the bay, the surrounding hillsides, the west side of the bay (including the west side park parcels), and Inverness Ridge.

Potential Scenic Route

Highway 1, traversing north-south along the east side of Tomales Bay, is on a statewide list of eligible routes to be designated as a scenic route.

Views from Area Roadways and Adjacent Properties

The primary views of the park parcels can be seen from Highway 1 on the east side of Tomales Bay, and Sir Francis Drake Boulevard and Pierce Point Road on the west side of the bay. Local residents and tourists traveling by private vehicle and bicycle see these views. Views of the park (both east and west parcels) are also clearly visible from boat users on the bay.

Highway and Sir Francis Drake Blvd. provide beautiful views of grass-covered rolling hills to the east, Inverness Ridge, forests, and pocket beaches to the west, and the blue waters of Tomales Bay. Sir Francis Drake Blvd. passes through the small villages of Inverness and Inverness Park before connecting to Pierce Point Road, the road that leads to the main park entrance of the Heart's Desire Area. Sir Francis Drake Blvd. provides expansive vistas of the east side park properties across the waters of Tomales Bay.

As Highway 1 winds along the east side of the bay, the viewer has a clear and unobstructed view of the west side parcels across the bay. Often these views also include east side parcels (Marconi Cove, Millerton Point, Tomasini Point, North Marshall) in the foreground. The east side of the bay also affords views of the agricultural uses of the landscape with remnants of fenced farmsteads, fishing operations, and grazing pastures for livestock.

AUDITORY RESOURCES

The park is located within a region of sparse human settlement, which creates a relatively quiet atmosphere in most areas of the park. There is a predominance of natural sounds within the park, including sounds of wildlife (primarily birds), wind in the vegetation, creeks flowing to the bay, and waves lapping the shoreline. When conditions are right, visitors can hear the faint roar of breakers on the Pacific Ocean side of Inverness Ridge or those outside the entrance to Tomales Bay.

There are sounds that may be considered negative that periodically come into the park from the surrounding landscape: traffic noise from Highway 1 and local roads; motorboats on the bay; motorcycle groups on Highway 1; and sounds from cattle grazing on nearby hills. Hikers on the uplands and ridges surrounding the bay can sometimes hear these sounds from across the bay, especially when the bay waters are quiet and reflect and amplify sounds from the opposite shore.

CULTURAL RESOURCES

CULTURAL RESOURCES OVERVIEW

Cultural resources are generally represented by prehistoric and historic sites, features, and objects. These resources may be isolated or part of a larger complex identified as districts or landscapes. Any or all of these resources may be discovered within a human cultural environment. The surface and subsurface character of these cultural

landscapes may include cultural resources from various groups and activities over time. This flow-of-history is managed and protected through Cultural Resource Management programs and the *Resource Directives* for the California State Parks.

Tomales Bay State Park contains within its boundaries many archaeological sites, ethnographic properties, and historic features that preserve evidence of human habitation, land use, and local historical character. During the 19th and 20th centuries, use of the lands now within the park was primarily oriented towards the area's agricultural and fishing economy. Consequently, most of the historic resources, including historic landscapes, relate to farming and fishing activities that continue to the present day. These historic pastoral and fishing activities help preserve the rural setting of the Tomales Bay area.

ARCHAEOLOGICAL RESOURCES

Archaeological resources include the material objects (artifacts) that reflect behaviors of past cultures. Preserving these artifacts in place is the best way to maintain the relationship between the artifacts and the archaeological context. Archaeological resources have the potential to reveal information about past climates, environments, and the written or oral history of an area's cultural heritage. Multi-component sites reflect the area's early Spanish and English exploration and contact. Many Marin County archaeological sites have been investigated searching for evidence of the presence of Sir Francis Drake's exploration party, including contact with the Coast Miwoks with whom Drake spent five weeks in the summer of 1579. Some of these sites may lie undiscovered in Tomales Bay State Park.

Archaeological resources known within the boundaries of Tomales Bay State Park include single component prehistoric habitation and shellfish processing areas, and multi-component Native American sites that exhibit possible contact period materials of non- Native American manufacture. In addition, Native American sites have been discovered that contain exotic materials such as Ming Dynasty pottery. It is speculated that these objects were collected from the shipwreck of the *San Agustin* of 1595. Objects from the cargo were presumably collected and transported to Native American villages. Archaeological remains from habitation or resource processing sites may hold artifacts that can be correlated to past occupational times including the period from initial European contact through the time of mission influence and into the period of Euro-American settlement.

Historic landscapes and sites may also contain archaeological resources that may identify homesteads, resource procurement sites, and landscape modifications. Examples in western Marin County include oyster beds and associated facilities, fishing ports and piers, and ranch and agricultural lands. Transportation corridors reflect the area's historic networks of commerce and recreation.

At the turn-of-the 20th century, Nels Nelson initiated the first archaeological research of the Bay Area by investigating the region's numerous 'Indian shell mounds'. Focused archaeological research in western Marin County has continued over the last 60 years

with scholars incorporating the early work of Treganza, Beardsley, Meighan, Fredrickson, and Slaymaker.

Paleoclimatic events and the San Francisco Bay region's prehistoric landscape have been researched by various scholars. Archaeological evidence in Marin County appears to correlate to the environmental changes that occurred in the Marin County coastal zone over the last 3,000 years. With a regional stabilization of the climatic and environmental landscape, water levels created large salt marshes, which provided habitat for waterfowl and shellfish. These marsh animals became key protein sources for native Californians. Native groups settled around these bay estuarine ecosystems and shorelines near sources of fresh water.

One of the established scholars of North Coast archaeology, Dave Fredrickson looked at the relationships of geographic space, boundaries, and environment to develop archaeological 'patterns'. Fredrickson incorporated the site type characteristics of a large Bay Area prehistoric village for his Berkeley Pattern. From this archaeological culture he examined the numerous traits in the archaeological record of a large geographic region. As a result, Fredrickson identified cultural elements that exhibited a 'pattern' that transcended cultural boundaries. These materials represented tools and objects of shared cultural lifeways based upon the environments of which they were associated with.

The archaeology of parts of Sonoma and Marin County is identified with the Berkeley and Augustine Pattern. The Berkeley Pattern was emerging in the east Bay Area by about 2000 B.C. and is represented by an abundance of ground stone technology indicating a dietary emphasis on vegetal resources. Acorns were the dominant staple, although there was an emphasis on shell fish collecting along the bayshore. Distinct projectile point types and faunal remains attest to the continued importance of hunting. In addition, a developed bone tool industry, flexed burials and certain types of *Haliotis* and *Olivella* shell beads and ornaments are noted in the sites. The size and depth of the shell mounds supports the premise of large populations.

The Augustine pattern incorporates the archaeological cultures previously developed out of the earlier Berkeley pattern. This pattern is characterized by intensified hunting, fishing, and gathering subsistence strategies; highly developed trade networks; elaborate ceremonial and mortuary practices; social stratification; and relatively high population densities.

The relatively high population of the west-side of Tomales Bay may suggest access to more extensive resources than are evident on the Point Reyes Peninsula. These sites include five 5-family sites; three 1-family sites; and twenty-five or so smaller sites. These sites are located between White Gulch on the north and along the shoreline from McClure Ranch to Shallow Beach and down the bay to Lagunitas Creek on the south. Eleven of these sites fall within the Tomales Bay State Park boundaries. It is suggested that the western shoreline Native American landuse area extended across Tomales Bay into Nicasio and Lagunitas Valleys, where substantial oak groves are available.

One archaeological site, CA-MRN-253, located within Tomales Bay State Park near Indian Beach was tested by California State Parks archaeologists. Preliminary analysis of the recovered cultural materials including carbon 14 dating suggest an Augustine Pattern, correlating to an occupation of around 1500 A.D. Non-Native American materials were recovered from the surface of this site. At this time it is not known if these materials reflect contact period occupation or later historic non-Native American occupation.

The archeological site at Heart's Desire Beach has had a history of impacts beginning in 1956 when a restroom was sited on part of the midden. The outlet of the estuary was channelized through the midden site in the early 1960s when the parking lot was built. A heavy run-off due to the severe winter rains of the 2002 season caused further damage to the lower reaches of the midden when part of the culvert collapsed. On the bayshore edge high tides and wind-driven water have also eroded this midden.

Wind, rain, and flowing water have damaged the archaeological sites at Tomales Bay State Park. Such damage varies depending upon soils, slope, and stability of the landform. In general, the north sides of sites along the west shore have experienced the most serious erosion.

ETHNOGRAPHIC OVERVIEW

Before circa A.D. 1770, the San Francisco Bay region was occupied by the Coast Miwok. The traditional ethnogeographic territory of the Coast Miwok lies in an area roughly bounded by present-day Duncan's Point, Cotati and Glen Ellen on the north, the Golden Gate of the San Francisco Bay on the south, San Pablo Bay and Sonoma on the east, and the Pacific Ocean on the west. The Coast Miwok probably numbered around 3,000 individuals. Early ethnographic research by Merriam and Barrett identifies two dialectic groups: Western, or Bodega, and Southern, or Marin, with the Southern group further divided into valley and coast subgroups. The word Tomales is derived from the Coast Miwok word *tamal*, which means "west, coast, or west coast".

The Coast Miwok lived in small tribal groups centered on larger villages. Prior to the European contact period, numerous Miwok villages were located on nearly every fresh water stream that entered the Bay. One major village was *Echa-kolum'* at the place later known as "Fishermens" (the point of land jutting into the bay opposite Marconi Conference Center). *Echacolom* (Echa-kolum') was one of the last active Miwok settlements on Tomales Bay.

Ethnographers at the turn-of-the century were interested in village site locations and interpreted the sociopolitical organization of the Coast Miwok. A large village had a chief and the appointment of succeeding leaders was not hereditary.

MAP 8: CULTURAL RESOURCE SENSITIVITY-ALL PARK AREAS

Because marine foods were important, settlement locations were adjacent to local food sources such as shorelines, bays, and lagoons.

Habitation structures are reported to have been conical and grass-covered, built on a frame of two forked, interlocking poles of willow or driftwood. A dwelling would accommodate 6 to 10 persons. Large villages had a sizable circular sweathouse, dug four or five feet into the ground.

Subsistence practices were based upon hunting, fishing, and gathering technologies following a seasonal annual round. The annual cycle is clear—some animal foods, such as deer and crab, were available all year. Winter and early spring were times of shortage, when stored dried acorns, seeds, and kelp were the mainstays. Seasonally, salmon runs provided needed protein, and in late winter, geese. In spring, the Miwok ate kelp they called *haskula* and they collected small fish stranded at low tide in rock pools. Fish, shellfish, and other food-gathering sites were either publicly used or privately owned. For example, certain fishing spots were owned by private individuals and used by family members on request. Others could buy rights to use a food-gathering site.

A Bodega Miwok, named Tom Smith, reported that deer were not plentiful, but more common than bear; rabbit were more prevalent than either; but that they "ate more clams than rabbits." Mr. Smith told anthropologist Isabel Kelly how long-necked clams were gathered in the old days:

Dug at low tide on flats. Used the digging stick (*Keok*); or a special stick, somewhat sharp, used for this one clam [this kind of stick was called *kukule*]. Stick thrust in to locate shells, and then one follows with the fingers. This clam found deeper than elbow depth. Gathered by both men and women. Collected in conical burden basket. This is the long-necked clam.

Maria Copa, a resident of the east shore at Marshall, was Isabel Kelly's primary informant for traditional plant use. Maria collected from many areas and provided Kelly with information regarding food sources as well as basketry materials and medicinal plant use.

Collecting, storing, and processing of acorns provided a staple food source for winter and early spring when other food sources were unavailable. Acorns of the tanbark were preferred; for bread, those of the valley oak. A large variety of seeds was harvested and eaten as pinole, not as mush. Greens were eaten fresh or cooked; edible roots were rather limited, as were fruits.

The group's material culture consisted of scant clothing, blankets, clamshell disk beads used as ornaments and currency, ceremonial instruments, ritual objects such as fishing and hunting charms, natural fiber ropes, storage baskets, and various stone, wood, and bone tools. Disk beads of clamshell were used as money. Basketry was well developed

with both coiled and twined styles with elaborate feather and clamshell decorations.

ETHNOHISTORIC PERIOD

English and Spanish land and sea exploration of the North Bay Area began in 1579. Traveling south along the Pacific coast Sir Francis Drake found a safe harbor on the Point Reyes Peninsula. Drake stayed in California from June 17 to July 23, 1579. He careened his ship and explored some of the surrounding countryside. Scholars, archaeologists, and historians have spent many years attempting to discover Drake's landfall in *Nova Albion*.

Returning from the Philippines, the explorer Sebastian R. Cermeño's ship the *San Agustin* was damaged by a storm and heavy waves off the California coast in November 1595. On November 6, the ship set anchor in Drakes Bay. Cermeño took possession of the land and port in the name of the King of Spain. A launch was assembled to explore the area and it is possible that the crew may have explored areas that are now part of Tomales Bay State Park.

On October 3, 1775, Lieutenant Juan Francisco de la Bodega y Cuadra, commander of the schooner *Sonora*, sailed into Tomales Bay, crossing the bar at the entrance and anchoring on the northeastern side of the bay opposite Sand Point.

There were innumerable Native Americans (named *Tamales* or *Tamals*), who crossed in reed floats (*Canoas de Tule*) from one side to the other to reach a hill near our anchorage. After a large number had gathered, they began to shout and continued for two hours without stopping. At the end of this time two of them came alongside the ship and with perfect frankness presented us with plumes, bone necklaces, a basket of seeds that tasted like hazelnuts (*Plumages, Collares de Gueso, un Sesta de semilla con el gusto de Avelana*), and various other trifles of this kind. I recompensed their offerings with handkerchiefs, mirrors, and glass beads, and they departed very pleased.

This account documents the first known contact between Spaniards and the Tamales people at Tomales Bay.

Exploration of the North Bay Area by Europeans continued in the late 18th Century when Spanish explorers and Franciscan missionaries traveled and encountered local Native American peoples. In 1793 Felipe de Goycochea was delegated to explore the mainland from the Puerto de San Francisco to Bodega Bay. His party of ten soldiers and a sergeant passed through Olema Valley, just south of Tomales Bay. Goycochea continued toward Tomales Bay and throughout his journey he wrote about the individuals and groups he met including numerous settlements along the northwest shore of Tomales Bay. According to Slaymaker, the Tamales people encountered Russian explorers as well as other visitors.

Active proselytization of the Tamales people began in 1801 or 1802. Over 170 neophytes baptized at Mission San Francisco between 1802 and 1810 were identified as Tamals. Milliken reports that most of the Tamal people who were baptized at Mission San Francisco between 1802 and 1803 were probably from the Olema area. However, some people baptized later as Olema-Tamals, and other Tamals baptized in 1807-1809, may have come from areas farther north, on the east side of Tomales Bay.

The Mission San Rafael was established in 1817 and documents record nearly 100 baptisms of Native Americans (Miwoks) from "*las Tamales*" in 1819. Bancroft identifies Jose Talis as headman of the Tamales in 1839 at the mission. The missionaries noted that he was from "*Bolego en los Tamales*." During the mission period, Mission San Rafael Arcangel and the other missions of the San Francisco Bay Area involved local Coast Miwok, as well as other Native Americans in the many labor tasks of running the agricultural-based mission economy.

After the mission period, local Native Americans continued in servitude to Mexican land grant owners. Acculturation and displacement continued throughout the mid-19th century. The Marshall, Bodega, and Sebastopol peoples were earning their livelihoods through farm labor or fishing within their traditional homelands. Dewey Livingston identifies "Rancheria Point" about 1915 as a Miwok settlement on the east side of Tomales Bay.

Many of the Coast Miwoks intermarried with Southwestern Pomo (Kashaya), Southern Pomo, and other Native American people who moved north. Some married Mexicans, Americans, or newcomers of Italian, Portuguese, Swiss, French, or Pacific Island ancestry.

HISTORIC CONTEXT

The east shore parcels of Tomales Bay State Park lie on land that was once part of the large Nicasio land grant, originally granted to Don Pablo de la Guerra and Don Juan Cooper, by Governor Pio Pico on August 30, 1845. The Heart's Desire and Inverness areas of the park on the west shore of the bay were once part of the Punta de los Reyes grant, a 22,525 acre area granted to the American James Berry in 1851.

Tomales Bay has long attracted people to its shores, originally for sustenance and more recently for recreation. A number of small towns developed along the shoreline of Tomales Bay in the 19th and 20th centuries. In the 1850s, ranchers and former prospectors established permanent residences and developed ranches on the slopes above the bay.

The following is a "historic tour" of the communities surrounding Tomales Bay beginning with Inverness in the north west and traveling south and east around the bottom of the bay to head north up the east shore to end at Tomales and Dillon Beach.

The towns of **Inverness and Inverness Park** are located along the west shore of Tomales Bay. In the 1860s, Judge James Shafter, whose family came from Inverness, Scotland, acquired part of a Mexican land grant that had been in the García family. Shafter's holdings included the sites of Inverness and Inverness Park. Inverness was settled in 1889 and has always been a "summer town" known for its weekend and vacation homes.

When the National Park Service began buying land for the Point Reyes National Seashore in 1965, Inverness and Inverness Park, lying on the only entrance road, became places for travelers to stop, eat and stay on their way to or from Point Reyes National Seashore. The hillsides above the bay are now dotted with inns occupied by vacationers.

Point Reyes Station, established in 1875, continues as the commercial center for the southern end of Tomales Bay. Point Reyes Station grew with the arrival of the railroad. Before the coming of (the now abandoned) rail service to the coast, nearby Olema was the main town in the area. North of Point Reyes Station, the tracks followed the east shore of Tomales Bay. Point Reyes Station went into a decline when the railroad was abandoned, and as recently as the early 1970s, numerous storefronts on the main street were boarded up. During the 1970s, the town revived with an influx of people willing to face the commute to San Francisco for the opportunity to live in such a spectacular natural setting.

The shoreline area of **Marconi** was originally a Miwok settlement called *Echacolom* (Echa-kolum'). This point of land was later called **Fisherman's** when it was a collection of houses marking a popular stop for train passengers who would buy fresh fish and oysters from the residents. Fisherman's was located along the bay side of what is now Highway 1. Fisherman's was renamed Marconi in 1919.

The Marconi Wireless Station was constructed for Guglielmo Marconi in 1913 by the New York based engineering firm of J.G. White. Marconi invented a successful system of radio telegraphy, and the Marshall site served as a radio receiving site. The transmitting station was located at Bolinas. Marconi's plan was to link the globe with a series of high powered wireless transmitters, of which the Marshall transmitter was the primary west coast site for broadcasting to Hawaii. Marconi built a large hotel for use by his employees and guests who visited the station.

The Marconi property, including the hotel, two single-story bungalows, the powerhouse, a workshop, and the operations building was later sold to RCA in 1919. Beginning in 1947 the property went through a series of owners until it was purchased by Synanon. Synanon was then a Santa Monica-based drug rehabilitation organization. In 1965, Synanon declared the Marconi property to be their world headquarters and added additional nearby parcels to their holdings. At its peak, Synanon had approximately 1,700 members, though how many actually lived on the Marconi property is unknown. Synanon constructed several buildings and added features to the complex such as tennis courts and a pond. The California State Parks Foundation acquired the property

in 1984, rehabilitated it as a conference center, and gifted it to California State Parks in 1989. It is now operated as the non-profit Marconi Conference Center.

By 1875, **Marshall** had a schooner wharf, a railroad depot, and lodgings for the fishermen and hunters who came to the area for sport. Marshall depended on the railroad to market its fish catches. Marshall remains a maritime-oriented community with dairy cattle roaming the hillsides above the town. Aside from ranching and a small herring-fishing industry, Marshall's other current business include bed-and-breakfast inns and oyster mariculture.

The ruins of **Hamlet** perch on the edge of Tomales Bay between Marshall and Tomales. Before Europeans found their way to the Bay, the area that became Hamlet was a gathering spot for Coast Miwok Indians. From 1875 to 1930, it was a whistlestop for the Northwestern Pacific narrow-gauge railway. From the 1930s to the 1980s, it was the site of Jensen's Oyster Beds (and beer bar). Hamlet got its name in 1865 when John Hamlet bought the 269-acre site from Henry Halleck. In 1873, John Hamlet sold some of his bay front acreage to Warren Dutton, another Tomales Bay settler. In 1953 the Jensen family settled in the Hamlet and started an oyster farm. The Jensen Family owned the oyster beds until 1987 and a year later the National Park Service bought the oyster beds as well as the water-front cottages. Hamlet was found eligible for the National Register of Historic Places by the National Park Service shortly after they acquired it. However in the decade that followed, Hamlet's buildings sat empty and were so badly vandalized that the Park Service demolished them.

Further north on Highway 1 is the town of **Tomales**. Tomales entered its heyday in 1875 when the town became a major stop on the new narrow-gauge railroad running the length of Marin County and terminating in lumber camps north of the Russian River. Historically, when Walker Creek was navigable, Tomales was a shipping port for potatoes, clams, grains, and dairy products headed to markets in San Francisco. Hay for horses and livestock made the journey in flat-bottomed schooners. Later, these same products would be transported to the markets of San Francisco by rail. Today, the hay crop remains an important part of Marin's agricultural harvest.

Begun as a resort town in 1859, **Dillon Beach** today has some year-round residents but the town comes to life on weekends and during the summer with vacationers, kayakers and beach-goers.

AGRICULTURE

Since the Mexican rancho period, the economy of the Tomales Bay area has been tied to livestock agriculture. The Mexican land grant names are still evident in present day of Marin County town names such as Bolinas, Corte Madera, Nicasio, Novato, and Tomales. Point Reyes became known as the birthplace of the California dairy industry, and during the Gold Rush it was well known for butter that was produced here and shipped, first by schooner and later by train, to cities and towns throughout the west. Soon, immigrants from Ireland, Switzerland, Portugal, Italy, and other countries established family farms that are still a vital part of the local economy, both on the Point

Reyes peninsula and along the eastern shore of Tomales Bay. Agriculture remains the largest private land use in Marin County and the rangeland where Marin cattle graze is considered to be some of the best in California. Farms and ranches in Marin County produce milk, beef, lamb, wool, feed crops, eggs, poultry, fruits, vegetables, and shellfish.

Mariculture, the cultivation of seafood, is a fast-growing sector of U.S. agriculture. About a half dozen West Marin companies annually produce about 20 percent of California's commercial oyster crop, despite problems with juvenile seed mortality and water quality. The Tomales Bay Oyster Company evolved from a San Francisco Bay company founded in 1909. The company moved from San Francisco Bay because of water pollution and set up business in West Marin where railroads transported the harvest to market. Today the company produces about a quarter million oysters each year.

RAILROADS

The North Pacific Coast Railroad was built along the east shore of Tomales Bay to service the coastal areas of northern Marin and Sonoma Counties. This narrow gauge line was organized in 1871 to transport timber, dairy, and farm products from these counties to San Francisco through a connecting ferry at Sausalito.

Construction on the line began in early 1873 and by mid-1874 the rails reached from the ferry docks of Sausalito to San Rafael. By 1875, regular service ran to Tomales through San Anselmo and Lagunitas. By 1876 the line ran to the Russian River and by 1886 regular passenger service was established to Cazadero.

The railroad transported redwood lumber from the Russian River mills to San Francisco. The relative ease of travel afforded by this railroad led city residents to start choosing the Russian River as a vacation destination. The railroad became a major link connecting Marin, Sonoma, and San Francisco counties. In 1902, the merging of several lines transformed the North Pacific Coast Railroad into the North Shore Railroad. From the terminal at Sausalito, ferries plied passengers to and from Tiburon and San Francisco. Additional mergers and changes in rail service took place over the years but ultimately the automobile replaced the rail and ferry services and the tracks on Tomales Bay were pulled up just prior to the start of World War II.

PARK PURCHASE AND DEVELOPMENT

In the 1940s a surge in vacation home building on the west shore of Tomales Bay threatened the local traditional use of the beaches north of Inverness. With the diminishing beach access due to private development a small group of concerned citizens formed the Tomales Bay Beaches Committee for the purpose of securing land for a county or state park. The Marin Conservation League took on this project. The Sierra Club, Alpine Club, Tamalpais Conservation League, Marin Nature Group, garden clubs, and other civic organizations aided in the crusade to save the beaches. The concerted efforts of these groups paid off in 1945 when the Marin Conservation League and the county financed the purchase of the 185 acre Shell Beach area to create a

county park.. The second step was taken when \$150,000 was paid to private owners for 840 additional acres bordering the beaches and including a major forest area. The Marin Conservation League continued its land acquisition efforts in 1952 with the purchase of the Willis Lynn Jepson Memorial Grove of Bishop Pines. Finally, on November 8, 1952, Tomales Bay State Park was formally opened to the public. The new park comprised over a thousand acres and incorporated the park lands acquired by the conservation groups up to that point. During the ceremony, the grove was dedicated to the memory of Willis Lynn Jepson, botany professor at the University of California, who worked unceasingly on behalf of conservation and was a frequent visitor to the area. Speakers were Joseph R. Knowland, member of the Commission for the California Division of Beaches and Parks, Newton B. Drury, chief of the Division of Beaches Parks, Charles Kasch of the State Park Commission, and Emanuel Fritz, professor of Forestry at the University of California at Berkeley, a close friend of the late Professor Jepson and Mrs. Norman Livermore, head of the Marin Conservation League. The establishment of this park brought to a successful conclusion the long work of a dedicated group of people who were determined to keep this land open for future generations to enjoy.

As with many state parks, Tomales Bay State Park has grown through the years. In 1997, 13.9 acres located across Highway 1 from Millerton Point were added to the unit. The Marconi Cove property and some additional parcels in the Millerton uplands are the latest acquisitions for Tomales Bay State Park.

BUILT FEATURES WITHIN THE PARK

The structures built in Tomales Bay State Park (Heart's Desire Area only) are "post-war standard pattern". Robert Uhte, State Parks architect from 1955-1964, was a prominent designer in this era of park design. A primary goal of his design philosophy was that structures 'fit' into their surrounding environment and not call attention to themselves. Uhte also introduced the concrete block as a major component of his designs.

The park's buildings that were constructed shortly after the park was established were included in a survey, "Inventory of Buildings and Structures Constructed Between 1942-1965 in California State Parks and Beaches, July 2002". This report included evaluations of the following park facilities: the park office, two comfort stations at Heart's Desire Beach, the park's shop building in the maintenance yard, two residences, and one detached residential garage. Allen determined that none of the buildings are eligible for either the *National Register of Historic Places* or the *California Register of Historical Resources* within the context of post war park administrative architecture. The following summarizes the remaining constructed features in the park by location, with an emphasis on those built before 1955.

HEART'S DESIRE BEACH

Park development was underway by the fall of 1953. Improvements included a scenic entrance road, a water system, a combination comfort station and dressing room at

Heart's Desire Beach, a parking area, and An additional comfort station was also built at the upper picnic area in 1959. Both comfort stations are examples of post war park design. The one built in 1957 at Heart's Desire Beach deviated from the standard design.

HEART'S DESIRE RESIDENCES, MAINTENANCE YARD, AND PARK OFFICE

A ranger's residence with a detached garage was built in 1954 and a second residence and garage, also of a standard design attributed to Robert Uhte, was built in 1961. A maintenance yard and shop was built between 1954 and 1959. The park office, constructed in 1959, at the entrance area to the park is a one-story wood frame building with a broad, shallow sloping roof protecting a recessed entry. It is a good example of the standard park design of Robert Uhte. It has functioned as both a ranger contact station and a park office since it was constructed.

INDIAN BEACH

Indian Beach is accessed from Heart's Desire Beach by way of a self-guided nature trail. The trail is introduced with a nature trail display case including interpretive plaques. These were installed in the summer of 1987. Indian Beach contains a Native American archeological midden but no above ground historic resources. The bridge which spans the estuary's inlet was installed in 1987-1988. The area is used extensively by the Environmental Living Program for school children. A Miwok bark shelter (kotcha) and a sunshade constructed of willow and tule plants have been constructed on the beach. There is also a pit toilet facility at Indian Beach.

PEBBLE BEACH

Accessible by trail, Pebble Beach has remained undeveloped with the exception of one vault toilet. State Parks installed the first pit toilet in 1951. Located near a marsh area, it was removed and replaced in June 1988 with a Shasta vault toilet. This new facility is situated on the hillside north of the beach and away from the wetlands.

SHELL BEACH

Shell Beach is accessed by trail from a parking lot off of Camino del Mar. There were two pit toilets on the hill above Shell Beach that were used between the early 1950s to the late 1980s. They were removed and the pits filled in when the two Shasta vault toilets were installed at the present locations at Shell Beach in the 1980s.

NORTH DREAM FARM ROAD PROPERTY

At present, a house, barn, and two State Parks office trailers are located on the Dream Farm property located on the western side of Tomales Bay just south of the town on Inverness. In the early 20th Century, this property was rented by the Guibbini family who grew vegetables. Later their son Theodore Guibbini owned it in the 1930s. By the 1940s the property had acquired the name, Dream Farm and was the location of the

community's Inverness Fair.

By 1949, Delbert Bender, who owned the Inverness Yacht Club, owned the Dream Farm property. In 1955, he built a residence at the foot of the hill, probably with the help of Jack Stockstill, an Inverness developer and contractor. This custom-built house consists of two distinct sections connected with a carport. It is a good example of modern residential construction that emphasized low horizontal lines, nearly flat roofs, and industrial-type multi-light windows. The building conforms to the topography of the hill creating a triangular footprint in the west wing. The Dream Farm house was slated for demolition in 1995 by State Parks but it still stands.

It is not known at this time when the barn-like structure on this site was built. The original function of the building is unclear but it was later converted into a workshop. The two office trailers were moved to the Dream Farm site from another state park some time in the 1980s as part of a plan to provide housing for California Conservation Corps crews.

MILLERTON POINT

During the 1870s Millerton Point, named for James Miller, was the site of an early oyster farm and later a large dairy with a wharf. Although the property was owned by Mrs. Miller and Mrs. Joseph Kirk, they leased it to Innocente DeGottardi in the 1920s, who later bought acreage on both sides of the roadway. Consisting of both bay front land that supported the early buildings and grazing land across the roadway, it became known as the DeGottardi Ranch. The DeGottardis also leased easements and property along Tomales Bay on the south side of Millerton Point. During the 1970s, State Parks demolished the 1906 DeGottardi barn, six vacation cabins, and several outbuildings on the Millerton Point parcel.

The Millerton Point Area currently contains a house trailer for a park employee family, a small outbuilding that was part of the original ranch, and a concrete trough. The house trailer is the only State Park employee residence located on the east side of Tomales Bay. In the visitor area at Millerton Point, there is a parking lot, a pit toilet, and picnic tables. Their exact construction dates are unknown. The loop trail beginning at the parking lot may be a former ranch road.

TOMASINI POINT

The old North Coast Pacific railroad once bisected this property. Today, all that remains of the old alignment are sections of the road bed and levees and the remains an old trestle standing in the estuary. The historic county road alignment paralleled the railroad alignment (just to the east of the railroad) through the Tomasini Point property. A small cabin once stood on this property but State Parks demolished it in 1984-85. Located across Highway 1 from Tomasini Point is the Varlow property which retains a few remnants from its use as a ranch. Present on the property is an abandoned farm vehicle and an abandoned springbox.

MARCONI COVE

Marconi Cove is the location of a marina complex developed in 1965 by Morgan Noble, who acquired the property in 1950. A pier, a gas station building, and a small generator building were constructed at that time. A small house on grade with Highway 1 was converted into a bathhouse/laundry as part of this marina development. Noble added rip-rap to extend the marina's property into the bay. With the exception of the pier, the buildings are still standing. The marina existed from 1965 until 1980 and included a pier and a recreational vehicle campground. In 1999 Noble sold his property to Dillon Vision LLC which in turn sold the land to State Parks in 2002.

The bath-house, a small frame building measuring 30' x 14', sits approximately thirty feet west of Highway 1 amid Eucalyptus trees. The Marin County assessor's office dates this house to 1920. A historic photograph from the Jack Mason Museum in Inverness shows the building set against a background of the (apparently newly-built and sparsely vegetated) American Marconi Company facilities, which were constructed in 1913-14. The bathhouse's construction, the drop siding, and the post and pier foundation are typical of construction from the late 19th and early 20th century. This small box-like building is representative of the many small fisherman houses that lined the bay next to the water's edge. Marconi Cove is adjacent to a ten acre state water bottom shellfish culture lease. Currently, Cove Mussel Company holds the lease.

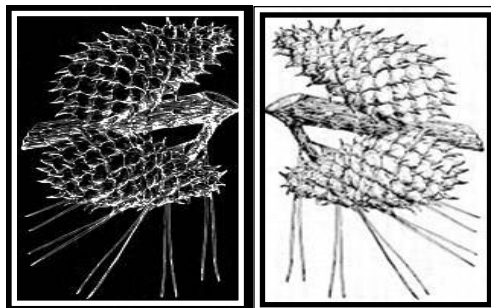
NORTH MARSHALL AREA

This sixty acre property, formerly known as the Angress Property, was acquired by State Parks in 1980. There are no structures on this property. An 1862 United States Coast and Geodetic Survey map, shows a settlement called Muldro City as being in this general area but it is not known if it lies within State Parks property. The Eucalyptus grove present on the property may be related to a 19th or early 20th century settlement.

REMAINING RAILROAD FEATURES IN THE PARK

At one time the North Pacific Coast Railroad generally followed the alignment of what is now Highway 1. USGS maps (Point Reyes Quadrangle) from 1918, reprinted in 1938, show the alignment of the railroad as differing from that of current Highway 1 only in areas where it was easier to build the road further inland. One place where this difference occurred was at Tomasini Point. Instead of following the eastward curve of the land, a trestle was built across the Tomasini Estuary. The railroad grade is also still evident as a historical feature where it crosses state park lands just south of Millerton Point, where it crosses Tomasini Point, and the entire stretch of the North Marshall Area next to the bay bluff. The berm that once supported railroad tracks is now breached where it crosses the Tomasini Estuary.

PLANNING INFLUENCES AND ISSUES



SYSTEM-WIDE PLANNING INFLUENCES

See **Appendix L: Planning Influences**

Planning for State Parks must be wide-ranging to consider issues that cross regional, local community, and park boundaries. Federal, state, county, and community agencies are responsible for providing oversight and review of various planning-related laws and policies, such as the California Environmental Quality Act (CEQA), the Americans with Disabilities Act (ADA), as well as Regional Water Quality Control Board and Air Quality Management District regulations.

Additionally, numerous California State Park Resource Management Directives guide the planning process.

REGIONAL DEMOGRAPHICS AND POPULATION TRENDS

POPULATION GROWTH

The population of Marin County has increased approximately 10 percent from 1985 to 2000. Between 2000 and 2020, the population is expected to grow 11.4 percent, from 247,289 (the current population) to 275,500. The population of the nine Bay Area counties (Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma) is expected to grow by one million over the next 20 years. Marin County is projected to assume less than three percent of the estimated total growth in the Bay Area. This population growth rate is lower than any of the other Bay Area counties except San Francisco.

Marin County's land-use regulations, which focus development within existing communities, is one factor limiting growth. Another factor limiting Marin County's demographic growth is the county's aging population. Both the median age and percentage of people over the age of 65 have continued to increase over the last 20 years. In 1980, the median age of Marin County was 33.6 years. By 1990, the median age increased to 38.0 years and then to 41.3 years in 2000. The percentage of senior citizens (age 65 and older) has increased from 9.7 percent of the population in 1980 to 13.7 percent by 2000. The Association of Bay Area Governments (ABAG) has estimated a doubling of the proportion of the region's population of people 65 years old and over in the next 20 years. Since 1990 there has been a 62 percent increase in the portion of Marin County's population 85 years and older.

As the population ages, the percentage of children and young adults in Marin County is decreasing. In 1980 the population of children was 24.0 percent, decreasing to 20.1 percent in 1990, with a slight increase to 22.7 percent in 2000. The young adult population also decreased from 18.0 percent in 1980, down to 12.7 percent in 2000. The proportion of adult population (ages 30-64) increased from 48.4 percent in 1980 to 53.2 percent in 1990, and then decreased to 50.9 percent in 2000.

According to the last census, the population of West Marin is 10,913. The population is generally stable or slightly decreasing on the coast and increasing in towns to the east (Pt. Reyes Light, 8/16/2001). The median age of the West Marin region is 44.2, slightly higher than the countywide median age of 41.3.

CULTURAL DIVERSITY

The Bay Area is an ethnically diverse region that is expected to continue to diversify. ABAG estimates that in the next 20 years the proportion of the Bay Area population that is white will decrease from 61 percent to 47 percent, while the Hispanic population will grow from 16 percent to 24 percent, the population of Asian and Pacific Islanders will increase from 16 percent to 20 percent, and the African American population will remain at approximately 9 percent.

The ethnic diversity of Marin County is much lower than the Bay Area region. Diversity in the county is increasing, although it is projected to diversify at a much slower rate than the in the Bay Area or California. In 1990, 88.7 percent of the total population of Marin County was white, decreasing to 84 percent in 2000. People of Hispanic origin comprised 7.8 percent of the population in 1990, increasing to 11.1 percent in 2000. Increases in diversity were also seen in the Asian or Pacific Islander population (4.7 percent in 2000) and African American population (2.9 percent). Other races comprised 4.9 percent of the total Marin County population in 2000 (U.S. Census Bureau).

The West Marin region is even less diverse than the countywide population, with a current population of greater than 90 percent white, and approximately 10 percent Hispanic.

LAND USES AND REGULATORY INFLUENCES

WEST MARIN PLANNING AND OPEN SPACE ORGANIZATIONS

Almost half of Marin County's 388,352 acres is in parkland, open space, or watershed lands, comprising the largest amount of protected open space in the nine-county San Francisco Bay Area. A large proportion of this land is located in the western portion of the county, surrounding Tomales Bay State Park and beyond.

The following is a list of national, state, and regional planning and open space organizations involved with the area around Tomales Bay State Parks.

ASSOCIATION OF BAY AREA GOVERNMENTS

Marin County is included within the Association of Bay Area Governments (ABAG). The Association is one of more than 560 regional planning agencies across the nation working to help solve problems in areas such as land use, housing, environmental quality, and economic development.

MARIN COUNTY COMMUNITY DEVELOPMENT AGENCY

The Marin County Community Development Agency completed a Countywide Plan in 1994 to address land use and resource management issues within the county. This plan is in the process of being updated; the revision is scheduled to be completed in 2004. In August 2002, a draft report was available from the county focusing on key trends, issues and proposed strategies to be used to update the Countywide Plan. Included in this report is current information regarding open space, trails, and parks and recreation. The report stresses the need for all public land management agencies in the county to develop a common vision for open space and trails, and a shared role in a regional approach to land management. The report identifies a high rate of use of existing recreational facilities in the county. It states that increasing cultural diversity, demand for age-related recreational facilities, and a countywide need for increased camping opportunities, among other needs, will be emphasized in the new planning effort.

The Marin County Community Development Agency is also spearheading an effort to update the Marin County Local Coastal Program. The Local Coastal Program is administered under the California Coastal Act. Implementation of Coastal Act policies is accomplished primarily through the preparation of local coastal programs (LCPs) that are required to be completed by each of the 15 counties and 58 cities located in whole or in part in the California coastal zone. An LCP includes a land use plan (LUP) which is the portion of the Countywide Plan most relevant to this park planning process. The programs in the LCP govern decisions that determine short and long term conservation and use of coastal resources. The schedule for updating local LCPs coincides with the schedule to update the Countywide Plan. The county was in a public outreach process to help determine planning issues for the LCPs through March 2003, and is now developing land use policies. The updated LCPs and Marin Countywide Plan will be taken to the County Board of Supervisors and the California Coastal Commission in 2004 for approval.

The Marin County Community Development Agency has jurisdiction over the small unincorporated settlements around Tomales Bay, including Tomales, Point Reyes Station, Marshall, Olema, and Inverness. The county has prepared Community Plans for 16 plan areas to supplement the Countywide Plan, including relevant information regarding land use, population and growth, transportation, housing, jobs and environmental protection.

MARIN OPEN SPACE DISTRICT

The Marin Open Space District (MOSD) was established in 1972 by public vote for the purpose of acquiring and managing areas of natural landscape primarily for environmental protection and public open space. The Marin Countywide Plan of 1994 states that the MOSD should “preserve lands which are of unique importance to county residents, but which are outside the boundaries of State and Federally-protected properties.” Since its inception, the MOSD has acquired many properties, generally in the central and southeast areas of the county. The closest MOSD properties to Tomales Bay State Park are the Gary Giacomini, French Ranch, Roy’s Redwoods, and Maurice

Thorner Memorial Open Space Preserves approximately 10 miles to the southeast of the south end of Tomales Bay.

MARIN AGRICULTURAL LAND TRUST

The Marin Agricultural Land Trust was founded in 1980 by a coalition of ranchers and environmentalists to preserve farmland in Marin County. It acquires agricultural conservation easements on farmland in voluntary transactions with landowners. It has protected more than 32,000 acres of land in the county, including lands abutting Tomales Bay State Park on the east side of the bay.

MARIN COUNTY RESOURCE CONSERVATION DISTRICT

The Marin Resource Conservation District was established in 1959 to conserve and enhance Marin's natural resources, including its soil, water, vegetation and wildlife.

Approximately 250,000 acres are included in the district which generally covers the watersheds of Stemple, Walker, and Lagunitas Creeks. In the past 15 years the RCD has administered over 3 million dollars in government and private foundation grants for watershed-wide erosion control and restoration projects. Today, the Marin RCD continues to bring together state, federal, and local agencies with private landowners to conserve soil and water resources.

THE NATURE CONSERVANCY

The Nature Conservancy of California is a non-profit conservation organization whose mission is to preserve California's natural heritage. It acquires large natural areas so that native species can survive and thrive, and it helps secure scenic open spaces that provide Californians with opportunities for recreation. The Nature Conservancy has acquired properties in Marin County, one of which abuts all three Inverness parcels at Tomales Bay State Park.

AUDUBON CANYON RANCH

The Audubon Canyon Ranch owns several properties in the area around Tomales Bay that are part of the Audubon Canyon Ranch wildlife sanctuary system. Their mission is to preserve, protect, and manage properties for native plant and animal species enhancement, to educate the public about the natural environment, and to support research and conservation efforts that enhance the preservation and management of the natural resources on their lands. Their Cypress Grove Preserve at the northeast end of Tomales Bay abuts Tomales Bay State Park's North Marshall Area on its south side.

TOMALES BAY WATERSHED COUNCIL

The Tomales Bay Watershed Council is a group made up of local organizations and landowners, businesses, government agencies, and others dedicated to improving the

water quality of Tomales Bay. The bay has not met water quality standards as outlined in the RQCB's Basin Plan and is listed as impaired under the Federal Clean Water Act, section 303(d). The Watershed Council's purpose is to create a management plan to preserve and protect Tomales Bay's water and land resources for sustainable uses by agriculture, aquaculture, business, environmental, recreation, and residential interests. The *Tomales Bay Watershed Stewardship Plan: A Framework for Action* was adopted in July 2003. The Council is working on a coordinated, comprehensive water quality monitoring program that includes Tomales Bay and tributary streams that flow through the watershed. Through outreach and education, the Council will work to promote the use of best management practices to address water quality and habitat issues.

INVERNESS PUBLIC UTILITY DISTRICT

The Inverness Public Utility District supplies drinking water for the community of Inverness and owns watershed lands adjacent to park parcels on Inverness Ridge. It also operates the Inverness Volunteer Fire Department.

TOMALES BAY ASSOCIATION

The Tomales Bay Association (TBA) is a grass roots community-based organization that is involved in a range of community and environmental activities. TBA has also been involved with salmon habitat restoration projects, public education, and local planning project reviews.

EASTSHORE PLANNING GROUP

The Eastshore Planning Group is an organization comprised of residents of the community of Marshall and vicinity that is concerned with issues affecting local area residents. It works with local and state agencies to address septic and other planning issues in the area.

FEDERAL AND STATE AGENCIES REGULATING THE LANDS AND WATERS AROUND TOMALES BAY

Numerous federal and state agencies have overlapping jurisdictions and responsibilities involving the terrestrial and marine aspects of the park. The regional relationship of California State Park's jurisdictions and responsibilities to those of other agencies is not completely documented. Interagency coordination could be improved concerning the regional management of ecological, biological, recreational, cultural, aesthetic, and educational resources.

These jurisdictional boundaries become especially complex in the waters of Tomales Bay itself. Some agencies own or regulate submerged lands of the bay, while others regulate the quality of the bay's water column, still others claim jurisdiction on activities on the water surface, and other agencies manage and have jurisdiction over the fish, invertebrates, mammals, birds, and plants that live in or move through the bay.

California State Parks generally manages the bay front lands of Tomales Bay State Park to a distance running parallel to and 1,000 feet waterward of the ordinary high water mark in accordance with Public Resources Code Section 5003.05.

The General Plan will not attempt to fully document the complex relationship of federal and state agencies regulating the values of Tomales Bay. However, the principal federal and state agencies regulating the lands and waters around Tomales Bay are listed below with a brief description of their jurisdictional claims and responsibilities.

NATIONAL PARK SERVICE

The National Park Service owns and operates park lands adjacent to Tomales Bay State Park lands on both sides of the bay (Point Reyes National Seashore on the west side and the Golden Gate National Recreation Area on the east side). Point Reyes National Seashore lands meet the borders of Tomales Bay State Park in the Heart's Desire and Inverness Areas. Point Reyes National Seashore patrols the surface waters of bay for enforcement of regulations regarding recreational use, and performs search and rescue operations and research in the bay's waters.

The 72,000-acre Point Reyes National Seashore reaches the Pacific Ocean to the west. The Park Service is currently conducting an update of its Point Reyes General Management Plan for the park.

The Golden Gate National Recreation Area (GGNRA) is the largest urban national park in the world, comprising over 50 separate sites covering 75,398 acres of land and water in the San Francisco Bay Area. The GGNRA parcels in the Tomales Bay area are administered by the Point Reyes National Seashore.

The National Park Service also operates Muir Woods National Monument nestled between Muir Beach and Mount Tamalpais State Park. Muir Woods is extremely popular and experiences challenging traffic and parking problems, particularly on weekends and holidays.

CALIFORNIA AIR RESOURCES BOARD

The California Air Resources Board is a part of the California Environmental Protection Agency, an agency that reports directly to the Governor's Office in the Executive Branch of California State Government. The Mission of the California Air Resources Board is to promote and protect public health, welfare, and ecological resources through the effective and efficient reduction of air pollutants while recognizing and considering the effects on the economy of the state.

The major goals of the Board are to: 1) Provide safe, clean air to Californians, 2) Protect the public from exposure to toxic air contaminants, 3) Provide leadership in implementing and enforcing air pollution control rules and regulations, and 4) Provide innovative approaches for complying with air pollution rules and regulations.

CALIFORNIA COASTAL COMMISSION

The California Coastal Commission was established by voter initiative in 1972 and made permanent by the Legislature in 1976 to regulate land and water uses in the coastal zone to ensure consistency with the policies of the Coastal Act. Virtually any development project or activity within the coastal zone requires a coastal development permit from the Coastal Commission. This applies to projects proposed by both private and public entities within the coastal zone. In some cases, local agencies such as cities or counties have developed a Local Coastal Plan (LCP). Where an LCP is in effect and has been approved by the Coastal Commission, the local agency has the authority to issue most coastal act permit for the development. Marin County has a Coastal Commission-approved Local Coastal Plan (1980) that is currently being updated. Coastal Act permits for all proposed projects within Tomales Bay State Park should, therefore, be obtained from Marin County under their approved LCP prior to project implementation.

CALIFORNIA DEPARTMENT OF FISH AND GAME (CDFG)

The California Department of Fish and Game is the trustee agency for the State's plant and wildlife resources. As such, they have regulatory authority over all of the State's special plant and wildlife species. Any project that has the potential for direct or indirect impacts to State-listed plant or animal species or Species of Concern requires consultation with California Department of Fish and Game. Authorization for "take" of listed species (i.e., an Incidental Take Permit) and mitigation may be required.

Any project that involves work within a streambed or stream banks of any permanent or intermittent stream requires a permit from the California Department of Fish and Game under Section 1601 (i.e., a Streambed Alteration Agreement) of the Fish and Game Code. A Streambed Alteration Agreement is also needed for any project that will: divert, obstruct, or change the natural flow of any river, stream, or lake; use materials from a streambed; or result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake. The California Fish and Game Commission has the authority from the State Lands Commission to lease state water bottoms for aquaculture. The Department of Fish and Game oversees and manages aquaculture on these leases and manages and sets the annual harvest quota for the commercial Pacific Herring gillnet fishery in Tomales Bay. Much of the commercial fishing occurs in waters adjacent to the State Park lands on the east shore.

The California Department of Fish and Game owns and operates the Tomales Bay Ecological Reserve, a large parcel at the south end of the bay managed for natural resource values.

CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION (CDF)

CDF's mission emphasizes the management and protection of California's natural Resources, a goal that is accomplished through ongoing assessment and study of the State's natural resources and an extensive CDF Resource Management Program. CDF oversees enforcement of California's forest practice regulations that guide timber harvesting on private lands. While Californians are learning more about the positive as well as the negative affects of fire, the prevention of large, damaging fires remains a priority for CDF. Marin County is one of several counties within the state which, under contract, take on the fire protection responsibilities of CDF. The Marin County Fire Department acts in this capacity for the park.

CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS)

The California Department of Transportation has jurisdiction over several of the transportation routes through Marin County. Highway 1 in West Marin is owned and managed by Caltrans. Permits are required for any construction work within a Caltrans right-of-way. State Parks should notify Caltrans for review of any construction work planned within the watershed area of the park's properties in which Caltrans property exists.

CALIFORNIA STATE LANDS COMMISSION

California State Lands Commission has legal jurisdiction over much of the tidal and submerged lands of Tomales Bay. The mission of the California State Lands Commission is to manage some 4.5 million acres of land held in trust for the people of California. The State holds these lands for all the peoples of the State for the public trust purposes of water related commerce, navigation, fisheries, recreation, and open space. Within these State owned lands lie many wetlands. The Commission manages the use of the State owned wetlands through leases to other public agencies and private parties.

The Commission has jurisdiction and control over State owned lands pursuant to Public Resources Code Section 6000 et seq. These lands include: a three mile-wide section of tidal and submerged land adjacent to the coast and offshore islands, including bays, estuaries, and lagoons; the waters and underlying beds of more than 120 rivers, lakes, streams, and sloughs; and 585,000 acres of school lands granted to the state by the federal government to support public education.

CALIFORNIA COASTAL CONSERVANCY

The California Coastal Conservancy is a state agency established in 1976 to purchase, protect, restore, and enhance coastal resources and to provide public access to the shore. It works in partnership with local and other public agencies, nonprofit organizations, and private landowners to achieve goals such as building trails and other public access facilities and restoration and enhancement of wetlands and other wildlife

habitat. The Conservancy has several completed and current projects in and around the Tomales Bay area, including stream restoration and agricultural easements projects.

REGIONAL WATER QUALITY CONTROL BOARD (RWQCB)

The San Francisco Regional Water Quality Control Board is the office that has jurisdiction over relevant projects occurring within Tomales Bay State Park. A permit from the RWQCB is required for all projects requiring a USACOE Section 404 (Clean Water Act) permit or a California Department of Fish and Game Section 1601 (i.e., Streambed Alteration Agreement) permit. A permit from the RWQCB is also required for all projects that have the potential for direct or indirect project-related impacts to water quality, or if the project requires a construction storm water permit (i.e., for projects with greater than one acre of land disturbance).

UNITED STATES ARMY CORPS OF ENGINEERS (USACOE)

The USACOE is mandated to regulate certain types of activities in wetlands and waters of the U.S. under the following sections of Federal law: 33 CFR – Navigation and Navigable Waters (COE); 40 CFR – Protection of Environment (EPA); Section 9 of the Rivers and Harbors Act of 1899; Section 10 of the Rivers and Harbors Act of 1899; Section 404 of the Clean Water Act; and Section 103 of the Marine Protection Research and Sanctuaries Act of 1972. Under these sections, the USACOE requires permits for the discharge of dredged or fill material into any water of the U.S. or wetland under its jurisdiction. A permit from USACOE must also be obtained for any and all structures, whether permanent or temporary, that are planned to be in or over any navigable water of the U.S. and those that affect the course, location, or condition of the water body. Types of projects requiring permits from the USACOE include: placement of wharves, dams, dikes, pilings, weirs, breakwaters, jetties, bank protection, aerial or subaqueous power transmission lines, intake or outtake pipes, permanently moored floating vessels, tunnels, artificial canals, boat ramps, aids to navigation, and any other permanent or semi-permanent obstacle or obstruction. Permits are also required from the USACOE for any project that requires dredging of, or placement of fill into, any wetland or water of the U.S. and for the transportation of dredged material for the purpose of dumping it into ocean waters.

UNITED STATES COAST GUARD

The U.S. Coast Guard's Bodega Bay station oversees boating regulations, navigational buoys, and similar surface water matters in Tomales Bay.

UNITED STATES FISH AND WILDLIFE SERVICE (USFWS)

The USFWS has regulatory authority over Federal Threatened and Endangered plant and animal species. Whenever a federally listed plant or wildlife species, or designated (or proposed) critical habitat occurs within a proposed project area, California State Parks is required to consult with the USFWS on direct or indirect impacts to those

species or their habitat as a result of the project. If potentially important impacts are identified, an *Incidental Take Permit* and/or mitigation measures may be required.

NATIONAL OCEANOGRAPHIC AND ATMOSPHERIC ADMINISTRATION (NOAA) FISHERIES

NOAA Fisheries has regulatory authority over federally listed marine species and their habitats. Whenever a proposed project has the potential to result in direct or indirect impacts to federally-listed marine mammals, fish, or other species or their habitats, California State Parks is required to consult with NOAA Fisheries. If potentially important impacts are identified, an *Incidental Take Permit* and/or mitigation may be required.

In 1971, the United Nations instituted a program to establish Biosphere Reserves across the globe, to serve as models for protection of the resources of wildlands and protected areas while providing for recreational use. One of these Reserves, the Golden Gate Biosphere Reserve, extends through the central California coastal region and seaward 30 miles. Included in this Reserve is the Gulf of the Farallones National Marine Sanctuary, part of a thirteen-unit national system established to protect important waters and secure habitat for aquatic species, shelter important cultural resources, and serve as valuable places for research and recreation. This 948-square-nautical-mile Sanctuary stretches from San Francisco to Bodega Bay, and includes Tomales Bay. The Sanctuary is administered by the National Marine Fisheries Service/National Oceanic and Atmospheric Administration in the U.S. Department of Commerce.

UNITED STATES NATIONAL PARK SERVICE/ POINT REYES NATIONAL SEASHORE

The National Park Service/ Point Reyes National Seashore patrols the surface waters of Tomales Bay for enforcement of regulations regarding recreational use, and performs search and rescue operations and research. Point Reyes National Seashore lands meet the borders of Tomales Bay State Park in the Heart's Desire and Inverness Areas.

TOMALES BAY ECOLOGICAL RESERVE

Following the "California and the World Oceans' Conference" in 1997, the California Resources Agency released a report which found that the designations for many of California's array of marine management areas, special areas along the coast below the mean high tide line and called Reserves, State Reserves, Refuges, State Parks, and Natural Preserves, were complex and often confusing. To address this issue, the Resources Agency commissioned a team to better define and evaluate state marine managed area classifications. Based on the team's report, legislation was passed that established six new classifications of state marine managed areas. The legislation also set up a process and time line for reclassifying existing areas and abolishing the old ones. The primary reason for new system was to create uniform classification designations that could be used by all state agencies, primarily California State Parks and California Department of Fish and Game.

One of the state marine managed areas occurs just south of Tomales Bay State Park. The area is called Tomales Bay Ecological Reserve and was established in 1971. The area consists of marshlands and tidal flats and is under the jurisdiction of the Department of Fish and Game. As of this writing, the process and timetable for reclassify this, as well as other marine managed areas, is in a state of flux.

GOLDEN GATE BIOSPHERE RESERVE/GULF OF THE FARALLONES NATIONAL MARINE SANCTUARY

At the broadest and highest level, the United Nations has included the waters and lands surrounding Tomales Bay in the *Golden Gate Biosphere Reserve*, recognizing the area's international importance to the conservation, research, and education of the earth's biodiversity. The shores of the park and all of Tomales Bay are also included in the *Gulf of the Farallones National Marine Sanctuary*, administered by the National Oceanographic and Atmospheric Administration.

ADJACENT LAND USES AND OWNERSHIP PATTERNS

Tomales Bay State Park consists of seven discontinuous properties along the west and east sides of Tomales Bay. The bay sits in a long bowl-shaped valley. The lands surrounding the bay sweep up to the Inverness Ridge on the west and to rolling hilltops on the east. The properties surrounding the scattered areas of the park are used for a variety of purposes by various owners.

HEART'S DESIRE AREA

The Heart's Desire Area is bounded on the north and west by the National Park Service's Point Reyes National Seashore. A large private in-holding with residences and a beach called "Shallow Beach" lies within this area. On the south side of the park are primarily private lands, residential properties, and watershed lands extending south and past the community of Inverness. Inverness lies approximately one mile south of the southern boundary of this area.

INVERNESS AREA

The Inverness area consists of three large discontinuous parcels along the west side of Tomales Bay, east of the ridgeline above the community of Inverness.

The northwest parcel is a complexly-shaped property along the east side of the Inverness Ridge abutting Point Reyes National Seashore. The Philip Burton Wilderness Reserve within the National Seashore begins very close to this border and extends almost a mile to the west. Embedded within and on the periphery of this state park parcel are watershed lands owned by the Inverness Public Utility District. To the east of this parcel the land slopes down to Sir Frances Drake Boulevard with a scattering of private and commercial ownerships in the unincorporated town of Inverness. To the south of this property is a large parcel owned by The Nature Conservancy, used primarily as watershed land. On the north end of this Conservancy parcel are a few

small private inholdings.

The northeast parcel's east boundary touches Sir Francis Drake Boulevard in two places and extends almost halfway to the top of the Inverness Ridge. This parcel is surrounded by private and watershed lands. The town of Inverness is just north of this parcel.

The southeast parcel descends steeply from the Inverness Ridge down to Sir Frances Drake Boulevard. The property extends to the boulevard in two points separated by private forested land. Across a narrow inlet in the bay sits the Tomales Bay Ecological Reserve, a large parcel at the south end of the bay owned and managed for natural resource values by the California Department of Fish and Game. The land south of this park parcel is primarily in private ownership, with the community of Inverness Park located approximately one mile from the southernmost end of the park property.

MILLERTON AREA

This area consists of two large land "points" extending west into the bay, Millerton Point and Tomasini Point, and a large upland area to the east of Highway 1. Highway 1 bisects this area in a northwest/southeast direction, splitting the parcel into two shoreline "points" and the upland area. Private dairy and sheep ranching lands lie to the north, east, and south of this area with the bay defining the western park boundary. Along the bay, in the central portion of this area between the two "points," is a strip of land between the bay and the highway owned by a private oyster farming company. An area of private land lies in the center of the park's property, east of the highway. Adjacent to the south end of this area, the California Department of Fish and Game owns a strip of land along the bay that is part of the Tomales Bay Ecological Reserve.

MARCONI COVE AREA

To the immediate north of the Marconi Cove Area is a small privately-owned beach property and beyond that lies a small holding of the National Park Service's Golden Gate National Recreation Area (GGNRA). The Marconi Conference Center State Historic Park is located north of this GGNRA property, on 62 acres owned and operated by the Department as a nonprofit conference facility. Highway 1 is adjacent to the Marconi Cove area on its eastern side; private grazing lands are east of the highway. Tomales Bay forms the western border of this area.

NORTH MARSHALL AREA

This area is a small, recent acquisition that constitutes the northernmost parcel in the park. Like the Marconi Cove area, this parcel is bounded by Highway 1 on the east, with private grazing and dairy lands to the east of the highway. To the west is Tomales Bay. South of the area lies the Audubon Canyon Ranch's Cypress Grove property, used by the Audubon Society as a natural preserve, for research, and for limited public access. North of this area is land owned by the National Park Service/ Golden Gate National Recreation Area.

TOMALES BAY

On the east side of the bay, five of the six commercial shellfish growers in Tomales Bay lease state water bottoms from the Fish and Game Commission adjacent to state park land. Tomales Bay Oyster Company leases 156 acres. To the north and adjacent to Tomales Bay Oyster Company, Hog Island Oyster Company, Marin Oyster Company, and Pt. Reyes Oyster Company each lease 25 acre parcels. Cove Mussel Company leases a 10 acre parcel in the southern end of Marconi Cove. These state water bottom leases comprise 47 percent of the total Tomales Bay aquaculture acreage.

REGIONAL TRANSPORTATION

LOCAL AND REGIONAL TRANSPORTATION AGENCIES

The Marin Countywide Plan of 1994 indicated goals of reducing or maintaining existing traffic on West Marin roadways, with the objective of preserving the rural character of the area. This would be implemented by providing alternatives to automobile travel.

METROPOLITAN TRANSPORTATION COMMISSION

The Metropolitan Transportation Commission (MTC) is the transportation planning, coordinating, and financing agency for the nine-county San Francisco Bay Area, including Marin County. MTC functions as both the regional transportation planning agency (a state designation) and for federal purposes, as the region's metropolitan planning organization (MPO). As such, it is responsible for the Regional Transportation Plan, a comprehensive blueprint for the development of mass transit, highway, airport, seaport, railroad, bicycle, and pedestrian facilities for the area.

In December 2001, MTC adopted the *2001 Regional Transportation Plan for the San Francisco Bay Area*, which specifies how some \$87 billion (2001 dollars) of anticipated federal, state, and local transportation funds will be spent in the nine-county Bay Area during the next 25 years. The plan sets aside nearly \$11 billion for major new rail and bus projects that will improve mobility and enhance connectivity for residents throughout the region.

The new Regional Transportation Plan provides funding for dozens of congestion relief projects on Bay Area freeways as well. These include widening U.S. 101 from Novato in Marin County to Windsor in Sonoma County. The plan also includes new bicycle and pedestrian trails around the Bay Area, and has a goal of connecting bicycles and pedestrians to existing and future rail and ferry facilities.

Of the total \$87.4 billion in transportation revenues that MTC anticipates coming to the Bay Area during the next quarter century, 77 percent is devoted to maintaining and operating the region's existing road, highway, and transit network. The remaining 23 percent provides for new projects or system expansion. Roughly 77 percent of the total funding outlined in the plan will go to public transit operations, rehabilitation, and

expansion. A small percentage of this funding will go toward improving roads and highways in west Marin and encourage development of alternative transportation in the region, but there are no major projects planned for this area.

MARIN COUNTY PUBLIC WORKS DEPARTMENT

The Marin County Community Development Agency's Public Works Department is developing an Integrated Transportation Plan to provide a comprehensive long range vision and practical implementation strategies for improving the range of public transportation choices for Marin County users. The goal of this effort is to enhance local mobility and create more livable communities by increasing opportunities for county residents and workers to use transportation modes other than the automobile. The Plan focuses on bicycle, pedestrian, and bus routes and commuter rail lines and potential connections between these alternative transportation modes. The county has conducted a planning process to gather public preferences for Marin County transportation system improvements and expects to present document for approval to the Marin County Congestion Management Agency in late winter 2003. Implementation and funding strategies for any plan proposals must then be taken to voters for approval. Proposals for the West Marin area are limited to providing shuttle systems to developed areas in the eastern Highway 101 corridor and to retain Highway 1 as a two lane road, with additional turn pockets and other minor improvements added as necessary to improve traffic flow. This document's overall vision for West Marin is to maintain its rural character. Bicycle trail connections between local communities are envisioned but no formal bicycle trail is planned along Highway 1.

MARIN COUNTY CONGESTION MANAGEMENT AGENCY

The Marin County Congestion Management Agency (CMA) is a joint powers agency established between the county and cities to address Marin's transportation issues and to fulfill the legislative requirements of Propositions 111 and 116, approved in June 1990. These propositions require the development of Congestion Management Programs (CMP) designed to address existing and future transportation problems in urban areas of California. Each urban county is required to develop and bi-annually update a CMP.

WEST MARIN STAGECOACH

West Marin County is fairly isolated from the busy cities on the east side of the county. The county currently serves West Marin with the West Marin Stagecoach which connects in San Anselmo and Mill Valley with the Golden Gate Transit bus system. The West Marin Stagecoach is a two-year demonstration service created by Marin County that aims to increase access for seniors, youths, and others to medical, civic, educational, work, and shopping sites throughout the eastern part of the county. The Stage's northernmost stops in West Marin are in Inverness on the west side of Tomales Bay and Point Reyes Station on the east side.

SONOMA MARIN AREA RAIL TRANSIT

To ease traffic congestion on the Highway 101 corridor in the eastern part of Marin County, the counties of Marin and Sonoma have formed the Sonoma Marin Area Rail Transit Commission (SMART) to develop an implementation plan for a commuter rail service for the two counties. The initial service would be a 68-mile route from Cloverdale in the north to downtown San Rafael in the south along the Highway 101 corridor, with 11 stations in the major communities along the route. Other public transportation modes such as existing bus lines would connect to these stations and offer alternative ways to access the western portions of the county, including the Tomales Bay area.

NATIONAL PARK SERVICE

The National Park Service currently operates a shuttle within the Point Reyes National Seashore on weekend days during the winter and spring, weather permitting.

AIR TRAVEL

The closest public airport to Tomales Bay is the Gness Field Airport near Novato, on the eastern side of the county, owned and operated by Marin County. The closest private airport is the San Rafael Airport in San Rafael, approximately 10 miles south of Novato on the eastern side of the county.

WEST MARIN COUNTY VISITOR PROTECTION AND EMERGENCY SERVICES

Emergency services to Tomales Bay State Park visitors are primarily provided by the park staff. Outside of park property, and as necessary for additional park support, emergency services for both visitors and residents of the area are coordinated through the Marin County Sheriff's Office of Emergency Services (OES). The OES is responsible for "developing, coordinating and supporting programs that prepare for, respond to, and recover from disasters and emergencies."

Since much of West Marin is unincorporated, law enforcement and crime prevention is the responsibility of the Marin County Sheriff's Office. The Point Reyes Patrol Division Sub-Station provides general law enforcement services in the communities adjacent to Tomales Bay State Park. The Marin County Sheriff Search and Rescue unit, a volunteer non-profit organization and part of the Field Services Bureau, also provides specialized rescue services to the area.

There are three hospitals providing basic emergency services in Marin County. Fire departments and privately owned companies also provide emergency medical services. Fire departments in the West Marin area near Tomales Bay State Park include the Point Reyes Fire Station located in Point Reyes Station and the Inverness Volunteer Fire Department. The Point Reyes Fire Station provides paramedic services, wildland and

structural firefighting, traffic accident response, and hazardous material response. The communities served include Point Reyes Station, Olema, and Inverness Park.

On the east side of Tomales Bay, the Tomales Fire Station is located in the town of Tomales. Paramedic and lifesaving services, as well as wildland and structural firefighting, are provided. The service area includes the communities of Tomales, Dillon Beach, Marshall, and Chileno Valley. The Point Reyes Station fire station will also respond to the east side park units. The Marin County Fire Department has developed a Marin County Fire Management Plan that addresses the threat and prevention of wildfires in Marin County. Wildfire protection is provided by seven fire stations and two lookouts.

WEST MARIN RECREATION AND INTERPRETATION

EXISTING WEST MARIN RECREATION FACILITIES AND USE PATTERNS

With approximately 133,360 acres dedicated to public open space, outdoor recreational opportunities are abundant within the environmentally diverse region of west Marin County. While most recreation users come from San Francisco and the surrounding bay region, visitors come from all across California to enjoy West Marin's outdoor opportunities. West Marin County is host to two of the top ten most-visited national parks in California and one of the top ten most-visited state parks in California (*California Department of Parks and Recreation Bear Facts October 2002*). Popular recreation activities in West Marin include: camping, surfing, hiking, mountain biking, road biking, boating, fishing, horseback riding, wildlife viewing, clamming, swimming, windsurfing, kitesurfing, tide pooling, and beachcombing.

The majority of public recreation in West Marin County occurs within a mix of federal, state and county lands. Federal properties include the Golden Gate National Recreation Area (GGNRA), Point Reyes National Seashore, and Muir Woods National Monument. State lands include Tomales Bay State Park, Samuel P. Taylor State Park,

Mount Tamalpais State Park, Marconi Conference Center, and Tomales Bay Ecological Reserve. The county of Marin has many properties within the Marin County Open Space District, Marin County Parks, and the Marin Municipal Water District.

The following agency documents involve current and future recreation planning in West Marin County:

- Point Reyes National Seashore General Management Plan
- Golden Gate National Recreation Area General Management Plan
- Muir Woods National Monument General Management Plan
- Mount Tamalpais State Park General Plan ok
- Samuel P. Taylor State Park General Plan
- Marin Countywide Plan
- Tomales Bay Watershed Stewardship Plan

- Marin Municipal Water District, Mount Tamalpais Road and Trail Management Plan.

A small portion of outdoor recreation occurs on private and non-profit owned lands such as Audubon Canyon Ranch, private campgrounds, and lands owned by the Boy Scouts of America.

The economy of West Marin is substantially supported by the outdoor recreational opportunities in the region. A steady flow of seasonal and off-season use supports the businesses serving the recreation market. It is estimated that almost 8,000 jobs in Marin County were related to the tourism and recreation industry in 2000 (*California Division of Tourism, March 2002*). Bed and breakfast inns, hotels, campgrounds, hostels, tour guides, equipment rentals, restaurants, and gas stations profit from outdoor recreation in West Marin.

CAMPING

Eighty-six percent of available camping in West Marin occurs in private campgrounds. West Marin camping opportunities in state or federal campgrounds are extremely limited in terms of number of sites, and in types of camping. Of 187 available campsites in West Marin public parklands, only 61 of the most popular type of camping sites (car camping) are available, and all are located at Samuel P. Taylor State Park. Thirty-eight walk-in sites, less than 800 feet walk from the parking to the site, are available mostly in Mount Tamalpais State Park. Only 12 group campsites and 20 boat-in sites are available in West Marin. Fifty-four backcountry campsites are available, mostly in Point Reyes National Seashore, the majority of which are open to use by hikers, trail bikers, and equestrians. Two exclusive equestrian sites are available in West Marin, one located at Mount Tamalpais State Park and one at Samuel Taylor State Park. This shortage of camping opportunities on public lands is particularly evident during peak season (late spring through early fall). Many campers looking for remote sites,

group sites, RV accommodations, and car camping opportunities are often disappointed to hear that these facilities are either already fully reserved or do not exist.

BEACH AND BOAT ACCESS

See **Appendix D: Tomales Bay Beaches and Access Areas**.

Pacific Ocean and associated bay recreation opportunities such as swimming, fishing and boating are popular. Access to beaches and boat launches is a critical element in support of these activities. Popular beach access areas are Bolinas Bay, Tomales Bay, Drakes Bay, and Bodega Bay.

THE CALIFORNIA COASTAL TRAIL

State Parks partners with the California Coastal Commission and the Coastal Conservancy in developing the California Coastal Trail, which will eventually run the entire length of the State's coastline. This general plan supports this partnership by coordinating proposed trail connections with the proposed route of the California Coastal Trail.

WEST MARIN TRAILS

West Marin has an extensive and diverse trail system catering to the demand for high quality recreation in the West Marin region. With over 500 miles of single track trail and fire road, this region has a complex system of trails that are protected and maintained by many different public agencies. Golden Gate National Recreation Area (GGNRA), Point Reyes National Seashore, Muir Woods National Monument, Samuel P. Taylor State Park, Mount Tamalpais State Park, Marin County Open Space District, Marin County Parks, and the Marin Municipal Water District are among the public agencies with major trail systems. Many of these trails either cross jurisdictional lines or connect to trails owned by other public agencies.

The Bay Area Ridge Trail and the San Francisco Bay Trail are two regional trails systems with segments in Marin County. Many of the trails in West Marin are part of, or connected to, either the Bay Area Ridge Trail or the San Francisco Bay Trail. The Bay Area Ridge Trail is a 400-mile, multiple-use trail connecting parks and preserved open spaces along the ridgelines surrounding the San Francisco Bay. To date, 210 miles of the Bay Trail, or slightly more than half its ultimate length, has been developed. When complete, the San Francisco Bay Trail will be a 400-mile recreational corridor encircling the entire Bay Area.

The California Coastal Trail plan proposes creating a statewide trail that would traverse through West Marin. The Coastal Trail will eventually be a 1200-mile trail along the California coast from Mexico to Oregon, connecting cities, towns, historic sites and natural areas. Existing trails, routes, and beaches will be incorporated into the new trail.

Groups such as the Bay Area Open Space Council, Coastwalk, and the Bay Area Ridge Trail Council are currently promoting the development and connection of trails in Marin County. Additions of hiking trails, mountain biking trails, equestrian trails, and multi-use trails in West Marin are expected to continue reflecting the public's desire for recreation.

WEST MARIN INTERPRETATION

Marin County has many educational and interpretive opportunities and resources such as visitor centers, cultural centers, environmental education centers, bird research centers and sanctuaries, salmon and watershed education programs, and cultural education programs.

POINT REYES NATIONAL SEASHORE

The neighboring Point Reyes National Seashore (PRNS) shares similar cultural and natural resources with Tomales Bay State Park. However, PRNS provides far greater interpretive opportunities for more varied audiences. Its interpretive facilities offer opportunities for visitors to access in-depth information on natural and cultural resources found in the PRNS, and to understand its ecological and environmental mission.

The three visitor centers at PRNS receive around 700,000 visitors a year. The Bear Valley Visitor Center provides the primary means for visitors entering PRNS to obtain information about how to have a safe, enjoyable, and educational experience in the park. The Center contains an extensive display of plant and animal communities found within the park, and in its auditorium visitors can see slide shows and various videos, including a general orientation to PRNS. Natural history books, cards and posters are for sale in the bookstore. The Ken Patrick Visitor Center, located at Drakes Beach, focuses on 16th-century exploration and the marine environment. The Point Reyes Lighthouse and Visitor Center contains exhibits on marine mammals, wildflowers, and lighthouses.

Self-Guiding Activities around Point Reyes National Seashore

Interpretive trails include the Earthquake Trail featuring trail-side interpretive panels that describe the 1906 earthquake and the San Andreas Fault zone and the Woodpecker Trail which interprets the flora and fauna of the area. The Morgan Horse Ranch remains a working horse ranch and interprets the characteristics, breeding, and history of Morgan horses. Kule Loklo, the replica Coast Miwok village, focuses on the traditional ways of life of these first inhabitants of the Point Reyes peninsula.

Guided Activities

Park Rangers lead programs covering a wide range of topics, including geology, Coast Miwok culture, and lighthouse history. Over 4,000 students a year participate in ranger-led interpretive programs. The most popular program brings students to *Kule Loklo*, the replica Coast Miwok village, to learn about the Coast Miwok way of life.

Point Reyes National Seashore's outdoor classroom and learning laboratory for the study of geologic and ecological processes fosters a greater understanding and appreciation of public lands. All educational programs are curriculum-based and associated hands-on activities are linked to the California and National Education Standards.

Park staff and other specialists also provide hands-on training for teachers. Workshops allow teachers to better connect their students to science, math and history using a diversity of park resources, curricula materials, and pre and post educational assignments to ensure a well-rounded field trip. Teachers may choose from a variety of workshops covering topics appropriate for their grade level. Some topics include water

ecology and water quality, the coho salmon restoration project, habitats restoration, the San Andreas Fault, steam ecology, habitats and adaptations of park wildlife. Continuing Education Units are earned in partnership with Sonoma State University.

PRNS Park Partners

Point Reyes National Seashore Association, a nonprofit organization incorporated in 1965, supports PRNS in providing quality interpretive programs to park visitors. The mission of the Association is to preserve Point Reyes National Seashore resources and educate the public generally about the environment. More than 4,000 children and adults attended their environmental education programs through the Point Reyes Field Seminars, Clem Miller Environmental Education Center programs, and Point Reyes Summer Camp. Point Reyes Field Seminars provide educational experiences that increase their understanding and appreciation of the features of Point Reyes National Seashore.

The Clem Miller Environmental Education Center functions as a living and learning facility where students and teachers can stay and explore park lands. Four 16-person and one 20-person dormitory style cabins accommodate up to 80 people.

The Miwok Archeological Preserve of Marin (MAPOM) is a park partner providing *Kule Loklo* with volunteers, demonstrations of California Indian skills, and educational programs. They provide adult classes in California Indian skills and their experienced instructors teach flintknapping, arrow making, basketry, hide tanning, and other native skills.

Point Reyes Bird Observatory Conservation Science

The PRBO Conservation Science education staff teaches children and adults about bird conservation science, illustrating basic environmental principles through the wonder of birds and inspiring environmental stewardship. More than 10,000 people observe PRBO field biologists at work each year at their Visitor Center in the Point Reyes National Seashore. PRBO'S Education and Outreach Programs reach several thousand students each year both in classrooms and at field sites.

AUDUBON CANYON RANCH

Audubon Canyon Ranch (ACR) is a system of wildlife sanctuaries in Northern California. Part of ACR's mission includes educating children and adults about the environment and the need to protect it through the use and enjoyment of ACR sanctuaries.

ACR's Bolinas Lagoon Preserve, a thousand-acre wildlife sanctuary 12 miles south of Tomales Bay is situated in a mix of Douglas fir, coast redwood, California bay, grasslands, coastal scrub, and chaparral. There are also streams, ponds, and freshwater marsh habitats. ARC was founded in 1962 to save the heron and egret nesting colony at this site. Bolinas Lagoon Preserve supports a major nesting colony of great blue herons and great and snowy egrets. The nesting egrets and herons attract

many curious visitors to the preserve. In the spring, these birds nest in the tops of the taller redwood trees finding ample food for themselves and their young from the shallow waters of Bolinas Lagoon and nearby tidelands. The preserve provides a self-guided tour with spotting scopes for viewing the nesting colony. Ranch guides are stationed throughout the preserve to answer questions about the wildlife.

CYPRESS GROVE RESEARCH CENTER

Audubon Canyon Ranch also has a research facility on the east shore of Tomales Bay called the Cypress Grove Research Center. Researchers at this center study wintering shorebirds, monitor waterbirds on Tomales Bay, investigate processes for restoration of coastal marshes, and track the reproductive performance of heron and egret colonies throughout the northern San Francisco Bay Area. The Cypress Grove Research Center does not offer public access except during community events, workshops, or seminars.

ENVIRONMENTAL EDUCATION COUNCIL OF MARIN

Environmental Education Council of Marin (EECoM) is made up of more than 60 environmental and community groups, educators and businesses that are committed to increasing the scope of environmental education in Marin County. The EECoM mission is to build an ever-increasing coalition of youth and adults committed to preserving the diverse environments in Marin County through education, stewardship, and sharing of resources.

MIWOK ARCHEOLOGICAL PRESERVE OF MARIN

Miwok Archeological Preserve of Marin (MAPOM) was founded in 1970 as a result of community involvement in the excavation of a local Coast Miwok village site. Through a diverse range of programs and cooperative efforts, with groups such as the Federated Indians of Graton Rancheria (Coast Miwok) and the Point Reyes National Seashore, MAPOM seeks to promote a better understanding of the Coast Miwok Indians, the first people of Marin and southern Sonoma Counties. MAPOM undertakes a diverse array of programs that promote awareness and understanding of the cultural, political and social issues facing the Coast Miwok today, as well as to preserve traditional habitat and skills. Many projects are undertaken in collaboration with the Federated Indians of Graton Rancheria (Coast Miwok) and the National Park Service.

MARIN MUSEUM OF THE AMERICAN INDIAN

The Marin Museum of the American Indian in Novato is dedicated to cultivating awareness and understanding of Native American history and culture. Their lecture series covers all aspects of Native American culture. The Museum's gallery features three dimensional exhibits as well as demonstrations by contemporary artists. A native plant garden offers a living display of Native California Indian botanical medicines and materials.

Over half of the Museum's visitors are school age children. Most of the children participate in the school educational programs. Students come from schools throughout Marin county, Sonoma County, the general Bay Area including San Jose, and as far away as Salinas and Stockton. Each year, more than 10,000 students participate in the Museum's program. The most popular presentation is the Miwok Cultural program. This educational program includes outdoor activities to familiarize the students with the Miwok environment. The students then tour the main gallery and an educational room filled with hand-on replicas. The Camp Coyote summer camp compliments the school year programming.

MARIN WILDCARE

WildCare was created in 1995 as a result of the merger of two long standing Marin County non-profits: The Terwilliger Center for Nature Education and the California Center for Wildlife, a wildlife hospital and museum. As a combined entity they heal and rehabilitate wildlife and reach out to "the stewards of tomorrow" through education and a fostering of appreciation for the environment. WildCare provides opportunities for both adults and children to experience wildlife through the use of educational tools made available in their exhibit hall. Terwilliger Nature Camp adventures teach a respect for the environment with camp programs that develop environmental knowledge and values. Each year more than 6,000 San Francisco Bay Area school children are introduced to the wonder of nature through class field trips led by WildCare Terwilliger Nature Guides.

THE BOLINAS MUSEUM

The Bolinas Museum features historical artifacts and contemporary art of coastal Marin County. The Museum's permanent collection includes Miwok artifacts and memorabilia from the local vicinity. Changing exhibitions of the contemporary and historical art are featured in the Museum's gallery.

MARIN AGRICULTURAL LAND TRUST

Marin Agricultural Land Trust (MALT) is a nonprofit conservancy created in 1980 by a coalition of ranchers, environmentalists, and community activists. As the first land trust in the United States to focus on agricultural land preservation, MALT preserves farmland in Marin County through conservation easements, public education and advocacy. MALT's public education outreach includes guide-led hikes, tours of farms, ranches and gardens, and educational programs.

TOMALES REGIONAL HISTORY CENTER

Tomales Regional History Center is an archival center preserving history of the settlements in North Marin County. The Center features lectures and social events highlighting the life and times of these settlements.

MARIN COUNTY OPEN SPACE DISTRICT

Marin County Open Space District's (MCOSD) mission is to enhance the quality of life in Marin County through the acquisition, protection, and responsible stewardship of ridgelands, baylands and environmentally sensitive lands identified for preservation in the Marin Countywide Plan. MCOSD lands are managed to protect and enhance their natural, undeveloped character while accommodating many outdoor recreational and educational pursuits. Rangers and District Naturalists lead walks covering topics as diverse as the night sky, Marin's history, tidepools, reptiles, shorebirds, bird migration, and restoration ecology. These guided walks take place on District lands, at Point Reyes National Seashore, and at Tomales Bay State Park.

SAMUEL P. TAYLOR STATE PARK

Like most state parks with a campground, Samuel P. Taylor State Park provides the three interpretive programs: campfire programs, nature hikes, and Junior Rangers. From Memorial Day through Labor Day weekends campfire programs take place at the Park. Topics range from redwood ecology to fire management in Marin. Nature walks also address redwood ecology and other natural resource topics, as well as the historical significance of Samuel P. Taylor's "Taylorville" enterprises. Two self-guided hikes interpret redwood ecology and the history of Samuel P. Taylor's paper mill.

Park staff gives approximately 20 special school talks or walks a year to a variety of groups. The majority of these walks are on the ecology of the park and its wildlife. An outreach program with nearby Lagunitas School brings the park's natural, historic and cultural features into the core curriculum of the school's sixth grade science class.

The Lagunitas watershed accounts for ten percent of California's spawning coho salmon population. In April, 2003, coho salmon was raised to the status of "endangered" on California's endangered species list and remains "threatened" on the federal endangered species list. The park responded to increased interest in the salmon and steelhead populations by offering "salmon walks" along the creek during the spawning months of October through April. These walks provide a close-up look at adult coho, chinook and chum salmon as well as adult steelhead trout. The walks interpret the life cycle of the fish and focus on the spawning taking place. The park installed interpretive panels at seven different locations along the creek that cover the salmon spawning process.

The connection that salmon and steelhead have with S.P. Taylor State Park and Tomales Bay State Park is important. The fish migrate both coming and going through both parks (through Tomales Bay and Lagunitas Creek). The Coast Miwok living in the vicinity of Tomales Bay State Park fished in Lagunitas Creek. As thousands of fish migrated up the creek, the Coast Miwok would trap the salmon as they migrated through narrow rock passages and smaller tributaries.

SALMON PROTECTION AND WATERSHED NETWORK

The Salmon Protection and Watershed Network (SPAWN) works to protect threatened coho salmon and steelhead and their environment. SPAWN uses a multi-faceted approach including environmental education, grassroots action, habitat restoration, policy development, media campaigns and litigation.

IDENTIFICATION OF REGIONAL AND PARK-WIDE PLANNING ISSUES

General plans make two kinds of proposals: namely, proposals to resolve existing and potential problems (issues) and proposals to realize unmanifested potentials (opportunities). A clear definition of the park's unresolved issues will shed light on how we might best resolve these problems and also realize the park's full preservation and recreation potential.

This section summarizes key issues that were identified by the planning team during the planning process. The intent is to highlight important regional and park problems and opportunities that will be addressed in the plan. The following are the primary planning issues this process will focus on resolving, either through overall parkwide management guidelines or through management guidelines for specific park areas. These goals and guidelines will be found in the *General Plan Proposals* section of this plan.

REGIONAL PLANNING, INTERAGENCY COORDINATION, AND COMMUNITY RELATIONS

The five areas of Tomales Bay State Park must be evaluated in a regional, community, and interagency context to effectively address park issues. The high public value and awareness of Tomales Bay and the Point Reyes area has resulted in a complex of overlapping public agency jurisdictions and responsibilities. Numerous federal, state, regional, and county agencies have oversight authority concerning the terrestrial and marine resources of the park. The plan describes these management responsibilities and the ownership patterns of adjacent terrestrial and aquatic properties.

Inter-agency and community coordination issues include natural, cultural, and recreational research and planning; interpretation; development and management issues such as trail connections, boat access, and campgrounds; land acquisition; water quality; wildfire and prescribed burning issues; exotic plants and animals; biocorridors; traffic issues; and the scenic and aquatic resources of Tomales Bay.

The park is part of the *Golden Gate Biosphere Reserve*, designated by the United Nations as an area having international importance to the health of the earth's biodiversity. The shores of Tomales Bay, including those of Tomales Bay State Park, are designated part of the *Gulf of the Farallones National Marine Sanctuary*.

PARK CONNECTIVITY

Tomales Bay State Park is currently comprised of seven disconnected land parcels (the main headquarters unit and three Inverness Ridge parcel groupings on the west side of the bay and three disconnected parcels on the east side). Some of the park properties on the east side of the bay are relatively recent acquisitions (Millerton Area uplands, Marconi Cove Area, and North Marshall Area).

The scattered ownership pattern of the park's properties presents one of the primary general plan challenges: namely, given the distances between these parcels, how to best provide wildlife corridors, integrity of plant communities, public awareness of and access to the park areas, continuity of trails and recreational uses, visitor services and protection, interpretation, facilities maintenance, and resource protection. An important goal of the plan is to coordinate the planned uses of these parcels so they can, as much as possible, function as a whole despite their physical separation.

WATER QUALITY, EROSION, AND ESTUARIES

All of the park's areas, except for the Inverness Area, border on and include the sensitive and dynamic marine resources of Tomales Bay and all of areas of the park lie within the Tomales Bay Watershed. The Regional Water Quality Control Board (RWQCB) has designated Tomales Bay as an impaired watershed. To help address this issue, the Tomales Bay Watershed Council has recently completed the *Tomales Bay Watershed Stewardship Plan: A Framework for Action*. Two of the Council's general goals are to improve the water quality of Tomales Bay and to restore the environmental integrity of the entire watershed.

Tomales Bay is a popular destination for swimmers, beachcombers, sunbathers, sailboat and yacht enthusiasts, windsurfers, anglers, and paddle craft recreationists. Kayaking has become very popular in the last few years and the beach campsites of the Point Reyes National Seashore are seasonally used to capacity by kayakers and other boaters. The increasing use of recreational boats on Tomales Bay may be having a detrimental effect on water quality (due to improper disposal of human waste) and on harbor seals and sea birds (by disrupting them at their strand rest areas).

The quality of Tomales Bay's water, marine resources, and recreational opportunities is greatly determined by the quality of the upland vegetation and land uses as well as the health of the bay's streams, estuaries, beaches, and intertidal areas. The Heart's Desire Beach parking lot was developed in the early 1960s by filling in an estuary and channeling the creek through an archeological midden.

SENSITIVE SPECIES, BIOCORRIDORS, AND HABITATS

The park is currently a refuge for a number of sensitive plant and animal species of terrestrial, estuarine, intertidal, and marine environments. Land clearing activities, such as agricultural production and urban development have produced a patchwork of

disconnected natural plant communities around park properties. Biocorridors, such as riparian areas, provide travel routes for wildlife between these habitat fragments. The plan makes recommendations to protect and enhance both terrestrial biocorridors and fresh water and marine biocorridors.

VEGETATION AND FIRE MANAGEMENT

The park's mature Bishop pine forest is partly fire-dependent for regeneration and the grassland areas may become brushland without occasional burning. Prescribed burning and wildfire are issues of concern given the proximity of private lands and structures to park areas. Exotic plant species are negatively affecting the park's native plants, animals, and habitats. The plan makes vegetation and fire management recommendations to help restore native plant communities and natural vegetation processes, improve recreational and visual values, and reduce wildfire danger.

RECENT ACQUISITIONS, RECREATIONAL DEMAND, AND VISITOR FACILITIES

Recreational demand in West Marin will likely increase as the Bay Area population grows. One of the major issues for this general plan is how to accommodate and respond to an expected rise in recreational demand in West Marin, while, at the same time, providing adequate protection for the sensitive natural, cultural and aesthetic resources that State Parks is committed to preserving. The plan addresses the adequacy and possible improvement or addition of recreational facilities such as trails, scenic wayside pullouts, group and individual picnic areas, interpretive exhibits, boat ramps, campgrounds, and restrooms. The plan considers improvements to park entrances, traffic and pedestrian circulation, and parking as well as visitor services and concessions. Few public camping facilities currently exist in the West Marin area. This plan will explore possibilities for camping facilities that are sensitive to park aesthetic, natural, and cultural resource values.

Expanding recreational opportunities in parts of the recently acquired east shore properties along Highway 1 can help meet recreational needs in this area. Recent acquisitions of ranchlands above Millerton Point, a former marina site at Marconi Cove, and coastal property north of Marshall are evaluated in the plan for their recreational and resource preservation potentials.

The plan also addresses visitor experience at the park and presents a methodology for monitoring future visitor experiences and park resource values to ensure that both continue to reflect the vision and goals of the General Plan.

VISITOR SAFETY AND NATURAL HAZARDS

The plan makes recommendations to improve visitor safety regarding potential hazards such as wildfire, landslides, and earthquakes.

PARK OPERATIONS

The plan makes recommendations to improve employee housing, administration, and park maintenance facilities. The current park maintenance facility in the Heart's Desire Area is considerably distant from the park's land parcels on the east side of Tomales Bay.

AESTHETICS AND VIEWSHED

The plan makes recommendations to improve protection and management of the park's aesthetic resources and maintain the area's unique spirit of place.

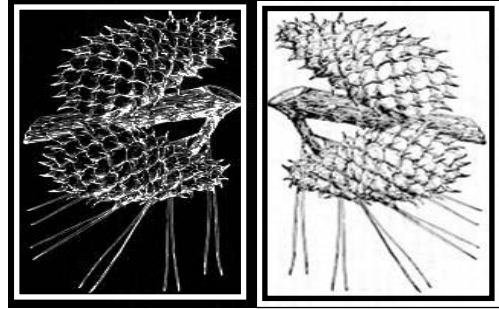
CULTURAL RESOURCES MANAGEMENT

The plan makes recommendations to improve protection and management of the park's archaeological and historic resources.

INTERPRETATION AND EDUCATION

The plan makes recommendations to expand the park's interpretive and educational programs and facilities to keep pace with park visitor and community needs.

PLAN PROPOSALS



MISSION, CLASSIFICATION, DECLARATION OF PURPOSE, AND VISION STATEMENT

The planning and management of Tomales Bay State Park is directed by a hierarchy of mandates and guidelines flowing from the *State Park Mission*, through its *State Park Classification*, through its *Declaration of Purpose*, to its *Vision Statement*.

DEPARTMENT MISSION

The Department's mission is to:

Provide for the health, inspiration, and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation.

CLASSIFICATION

California State Parks uses a wide spectrum of unit classifications from the California Public Resources Code (Section 5019.50-5019.80) to establish the overall management and recreation intent of a particular park unit. The Park and Recreation Commission classifies all units of the State Park System. Being classified as a "state park," one of the possible classifications (as opposed to "state preserve" or "state recreation area"), this general plan for Tomales Bay State Park must be consistent with the following Section 5019.53 of the Public Resources Code:

State parks consist of relatively spacious areas of outstanding scenic or natural character, oftentimes also containing important historical, archeological, ecological, geological, or other similar values. The purpose of state parks shall be to preserve outstanding natural, scenic, and cultural values, indigenous aquatic and terrestrial fauna and flora, and the most important examples of ecological regions of California, such as the Sierra Nevada, northeast volcanic, great valley, coastal strip, Klamath-Siskiyou Mountains, southwest mountains and valleys, redwoods, foothills and low coastal mountains, and desert and desert mountains.

Each state park shall be managed as a composite whole in order to restore, protect, and maintain its native environmental complexes to the extent compatible with the primary purpose for which the park was established. Improvements undertaken within state parks shall be for the purpose of making the areas available for public enjoyment and education in a manner consistent with the preservation of natural, scenic, cultural, and ecological values for present and future generations.

Improvements may be undertaken to provide for recreational activities including, but not limited to, camping, picnicking, sightseeing, nature study, hiking, and horseback riding, so long as those improvements involve no major modification of lands, forests, or waters. Improvements that do not directly enhance the public's enjoyment of the natural, scenic, cultural, or ecological values of the resource, which are attractions in themselves, or which are otherwise available to the public within a reasonable distance outside the park, shall not be undertaken within state parks. State parks may be established in the terrestrial or nonmarine aquatic (lake or stream) environments of the state.

DECLARATION OF PURPOSE

The Declaration of Purpose describes the purpose of the park and is the broadest statement of management goals designed to fulfill the vision for the park. A Declaration of Purpose is required by the Public Resources Code, Section 5002.2(b), "setting forth specific long-range management objectives for the park consistent with the park's classification . . ."

The Declaration of Purpose has been revised in this planning process to read:

The purpose of Tomales Bay State Park is to provide stewardship of lands on both sides of a large, narrow, protected Pacific Ocean Bay formed by the geologic feature that underlies it, the San Andreas Fault. California State Parks will preserve, protect, interpret, and manage the unit's natural, cultural, and scenic resources, features, and values, making them available to the public for their inspiration, recreation, and education.

The park offers broad bay vistas, high-quality beaches, estuaries, riparian areas, grasslands, scrublands, and forests. The park includes Bishop pine forests, which support nesting spotted owls and ospreys. Archeological remains of Native American village sites are protected in the park.

TOMALES BAY STATE PARK VISION STATEMENT

The *Vision Statement* describes how the park will be managed and interpreted by park staff and how it will be experienced by visitors as the proposals in this general plan are implemented. The guiding vision for Tomales Bay State Park is as follows:

Tomales Bay State Park is a unique refuge for nature, culture, and people focused on preserving, enjoying, and interpreting the special values of the Tomales Bay region. Native plants, wildlife, and marine life are protected and visitors find relaxation, rejuvenation, recreation, and inspiration in the park's natural environment. The park and the story of the Miwok people who lived here inspire and teach visitors to discover their connection and commitment to the Earth and to sustainable living. The park is managed to preserve and enhance its natural vistas and beaches, its refuges of silence and dark night skies, its clean waters and air, its intact soils, its natural terrestrial, estuarine, intertidal and

marine processes and ecosystems, its native plant species and associations, its native animal species and populations, and its cultural, recreational, and educational values. The park's educational and recreational programs and facilities will encourage a diversity of visitor experiences in harmony with the environment, promote preservation, appreciation, and stewardship of cultural and natural resources, and be accessible to people of all backgrounds, ages, abilities, and place of residence. The park will maintain its current cooperative relationships with neighboring communities, landholders, and agencies in areas of mutual interest.

INTRODUCTION TO GOALS AND GUIDELINES

The *Goals and Guidelines* section is the heart of this general plan in that it delineates the plan's proposals for managing the park's natural, cultural and aesthetic resources, for interpreting these resources, for providing recreational facilities and opportunities, and for operating and maintaining the park. The "Goals" establish the purpose and the "Guidelines" define how the plan proposes that the Department achieve this goal. Each guideline is tagged with a prefix and a number to identify that guideline and its area of concern. The prefix is introduced in brackets at the beginning of each guideline section. An example of a guideline prefix and number is: WAT-1: (followed by the guideline).

*An example of a
guideline prefix and
number is: **WAT-1**
(followed by the
guideline)*

There are two different levels of Goals and Guidelines. The first level is a "parkwide" view that presents all the goals and guidelines that are of a general nature. The second level is a "park area" view that presents proposals specific to each of the park's five planning areas.

Recommended research studies and plans are listed immediately following each subject area so they can be related to the Goals and Guidelines and be easily found for scheduling and budgeting purposes.

PARKWIDE GOALS AND GUIDELINES INTRODUCTION

This section presents the goals and guidelines that apply parkwide for resource management and planning facilities for public access, recreation, interpretation, and park administration in a setting where many resources are rare and sensitive. It addresses planning issues that apply to all geographic areas of the park. These goals and guidelines, as well as those for specific areas of the park, are driven by the Declaration of Purpose and Park Vision.

PARKWIDE GOALS AND GUIDELINES FOR NATURAL RESOURCES MANAGEMENT

The Department's Mission mandates efforts to "preserve the state's extraordinary biological diversity, protecting its most valued natural resources." Additionally, the park's Declaration of Purpose aims to achieve the goal to "preserve, protect, interpret and manage the unit's cultural, natural and aesthetic resources, features and values" in order to progress toward the ideal image of the park conditions as described in the Park Vision.

A general plan does not provide specific inventory and monitoring protocols to assist in the protection of special status species. A large number of protocols are already established and in use by other agencies, groups, and individuals. Additionally, the Department has an Inventory, Monitoring, and Assessment Program (IMAP) that has established inventory and monitoring protocols for California State Parks for vegetation and wildlife. These protocols are the same as those used by other agencies and organizations, in most cases. For most special animals, there are species-specific protocols that will be provided or recommended by the California Department of Fish and Game and/or the U.S. Fish and Wildlife Service.

WATERSHED MANAGEMENT AND WATER QUALITY GOALS, GUIDELINES, AND PLAN

Historic land uses, such as logging (Inverness Ridge), road and parking lot construction, railroad construction (east side of Tomales Bay), grazing and farming, and stock pond construction have altered many of the natural processes in the park's watersheds. Problems resulting from these uses include upland and stream bank soil erosion, stream and bay sedimentation, loss of riparian vegetation, loss of estuaries, and loss of aquatic habitat. Some of these changes also contribute to water quality problems.

The surface water and groundwater in the Tomales Bay watershed are important resources that must be protected. Tomales Bay has been designated as an impaired water body for pathogens, nutrients, sediment, and mercury. Human practices such as historic farming (vegetable crops and livestock), logging, road building, grading, mercury mining, and use of septic systems have all contributed to the water quality impairment of Tomales Bay.

Watershed and Water Quality Goal:

Promote healthy watershed processes and high quality waters in the park and in the Tomales Bay Watershed, and in Tomales Bay itself in cooperation with other agencies and the local community.

Watershed and Water Quality Guidelines

WAT-1 Installation or maintenance of channelized streams and hardened stream banks should be minimized or eliminated except where necessary to protect existing critical infrastructure. Where it is necessary to stabilize a channel in place, biotechnical methods should be utilized to the greatest extent possible.

WAT-2 Consider the removal of stock ponds on park lands to re-establish normal seasonal flow patterns.

WAT-3 As appropriate, rehabilitate stream and upland areas to restore natural drainage patterns and geomorphic stability. Enhancement activities might include road and trail rehabilitation or removal, eliminating manmade channel restrictions, stream modifications, debris management, or re-vegetation.

WAT-4 Identify potential naturally-occurring impacts to water quality in the park, such as landslides, debris flows, and stream channel erosion. Determine if these natural processes have been aggravated or accelerated by human activities and, if so, devise enhancement measures. Recognizing that flooding and bank erosion are natural ecological processes, limit erosion improvement measures to addressing human-accelerated erosion and sedimentation.

WAT-5 Identify and manage erosion occurring from roads and trails on park lands. Where feasible, use best management practices from local Resource Conservation Districts and Natural Resources Conservation Service when removing or regrading existing roads and trails.

WAT-6 Reduce concentrated surface water runoff and sediment transport, keep disruption of soils to a minimum, reduce impervious surfaces, and use proper techniques for water removal from trails and roads.

WAT-7 Evaluate new projects and increased visitor use within the park to ensure they do not degrade surface and groundwater quality. Refer to the current edition of the San Francisco Bay Regional Water Quality Control Board's Basin Plan for the water quality standards and the surface water quality objectives for Tomales Bay and its tributary streams.

WAT-8 Participate, where feasible, in the collection of water quality data from State park lands. Work with

Cooperate with federal, state, county, and local agencies to improve the health of Tomales Bay. Where possible, work to support the goals of the Tomales Bay Watershed Stewardship Plan

universities, colleges, and other researchers to increase the scientific knowledge that could benefit park watershed management.

WAT-9 Facilitate information sharing about Tomales Bay and the surrounding watershed by participating in regular “State of the Bay” conferences.

WAT-10 Cooperate with federal, state, county, and local agencies to improve the health of Tomales Bay. Where possible, work to support the goals of the *Tomales Bay Watershed Stewardship Plan*.



Watershed Management Plan

Develop a Watershed Management Plan for the park to define current conditions, identify data gaps, and to determine where improvement measures are needed. Elements of this plan may include, but not be limited to: 1) Inventory and prioritize sediment sources, analyze the sediment transport functions in the stream systems with respect to their impact on instream habitat and on sediment delivery to Tomales Bay. Assess and monitor the impacts of park roads on water quality. 2) Determine if fluvial geomorphic analysis is needed for park streams (and if so, at what level). This analysis would provide a scientific basis for selection, design, implementation and monitoring of future fisheries habitat enhancement and sediment reduction projects. 3) Assess the impacts to ecology, the watershed, and water quality from recreation and other park activities.

VEGETATION MANAGEMENT GOALS, GUIDELINES, AND PLAN

California State Parks is committed to the conservation and enhancement of native plant communities. The following goals and guidelines reflect this commitment and are designed with that objective in mind. They focus primarily upon the control of exotic plant and wildlife species, as well as on the reintroduction of natural processes to maintain and restore the health of native plant communities at Tomales Bay State Park.

Plant Communities Goal:

Manage for the enhancement and perpetuation of native plant species diversity and the biological and compositional integrity of native plant communities.

Plant Communities Guidelines

VEG-1 Establish measures to protect the park’s sensitive plant communities from the impacts of recreational use and development.

VEG-2 California State Parks will coordinate, when appropriate, with adjacent public and private landowners with regard to the management of regional plant communities.

Sensitive Plant Species Goal:

Protect all sensitive plant species that are on Federal or State rare, threatened, or endangered species lists, and avoid and minimize negative impacts as much as practicable to species of concern, California Native Plant Society List 1B and 2 taxa, and, where possible, species that have local or regional importance whether or not they appear on any endangerment lists.

The park unit's sensitive plant communities will be protected from future development and visitor impacts.

Sensitive Plant Species Guideline

VEG-3 Sensitive plant species and community surveys will be conducted as appropriate during the environmental review process for all park projects that have the potential to impact sensitive species or their habitats including the development of new trails, facilities, and structures.

Exotic Plant Species Goal:

Eradicate or control invasive, exotic plant species in an effort to reduce negative impacts to native plant species and plant community integrity in the park.

Exotic Plant Species Guidelines

VEG-4 Sensitive plant communities and sensitive plant populations that are affected by exotic plant species will be given a priority in eradication efforts.

VEG-5 Eradication efforts will focus on the most invasive and rapidly-spreading exotic plant species first such as the non-native and hybrid crosses of cordgrass (*Spartina* spp.), should it spread into park boundaries from surrounding properties, and other CallPC Red Alert, List A-1, or List A-2 species.

VEG-6 California State Parks will co-ordinate, when appropriate, with adjacent public and private landowners to help control and eradicate invasive exotic plant species and to identify and implement methods that reduce the number of invasive species introductions into the park.

VEG-7 Non-native species used for interpretive purposes or for recreating historic landscapes shall be species incapable of naturalizing and spreading into other areas of the park, or if inherently invasive, shall be contained within the boundaries of a designated historic landscape. Those areas not identified as culturally important will be restored to natural conditions according to a District approved vegetation management plan.

Prescribed Fire Management Goal and Guidelines

The occurrence of periodic fires from aboriginal times through the European settlement period has had an important influence on the composition and distribution of plant communities within Tomales Bay State Park. In modern times, fire suppression has caused fire frequency to decrease, which has altered the distribution and composition of most plant communities and increased fuel accumulations in the area. Portions of Tomales Bay State Park have had a fire-free interval of over 80 years. This has allowed forested areas to develop hazardous fuel accumulations and to expand at their margins into adjacent grasslands. In addition, pre-historic coastal prairie sites have been invaded by coyote bush in the absence of fire. It has also been observed that some Bishop Pine stands have had very low seedling growth in the absence of fire and are now in a state of serious decline.

Prescribed Fire Management Goal:

Rehabilitate the role of fire in the natural ecological processes of Tomales Bay State Park.

Prescribed Fire Management Guidelines

VEG-8 Work with appropriate agencies to develop a Prescribed Fire Management Program for the park in order to achieve ecosystem, cultural landscape management, and air quality goals.

VEG-9 It may be advisable to study treatment cost and effectiveness in areas dominated by Bishop pine by burning small test sites. In other areas, such as plant communities dominated by grasslands or shrubs, this may not be necessary because of existing information.

Ensure that the U.S. Fish and Wildlife Service is consulted on issues related to burning in habitats and where listed species are known to occur.

VEG-10 This program will be periodically upgraded to reflect ongoing accomplishments, refinements, additional resource inventory information, changes in prescribed fire science and technology, and changes in state and federal regulations.



Vegetation Management Plan

Healthy native vegetation promotes natural ecological processes while degraded conditions harm resources such as water, soils, and wildlife. A Vegetation Management Plan should guide managers in restoring and maintaining native species biodiversity and ecological processes. The biodiversity goals are achieved by perpetuating and enhancing native plant populations and plant communities. The ecological process and

endangered goals are achieved in two ways: 1) by protecting important habitats, such as wetlands, riparian areas, and biocorridors from degradation, and 2) by restoring and maintaining natural influences such as fire and plant succession.

The Vegetation Management Plan should:

- define desired mix of plant communities and successional states for all parts of the park
- prioritize vegetation management treatments including control and eradication of exotic plant species
- guide habitat restoration and enhancement efforts
- implement periodic sensitive plant surveys, exotic plant surveys, mapping, and long-term monitoring using California State Parks' statewide *Inventory, Monitoring, and Assessment Program (IMAP)* protocols
- address methods for avoiding or minimizing cumulative negative impacts to sensitive plant populations in the park.

A Vegetation Management Plan can also help reconcile environmental objectives in vegetation management with other park management concerns such as cultural and recreational goals. The plan should be based on the best available scientific information and continuously improved as new information is derived.

WILDLIFE MANAGEMENT GOALS, GUIDELINES AND STUDIES

Effective management of park wildlife is complicated by the park's seven relatively small and disconnected parcels. Healthy native wildlife populations can best be maintained by encouraging partnerships with adjacent landowners, maintaining and creating biocorridors, and participating in regional wildlife management efforts.

General Wildlife Management Goal:

Protect, restore, or maintain natural animal populations and their habitats, for the purpose of establishing self-sustaining populations in a natural ecological setting.

Wildlife Management Guidelines

WIL-1 Manage marine, estuary, and terrestrial environments to protect and perpetuate these ecosystems and their associated wildlife in accordance with Department policies and directives and with the rules and regulations of other applicable public agencies as specified in the Public Resources Code.

WIL-2 Reduce and, where possible, eliminate wildlife access to human food and garbage by using wildlife-proof trash containers throughout the park, including administration and residence areas. Educate the public about the detrimental effects of feeding wildlife and releasing animals in the park.

WIL-3 Consider reintroduction of extirpated species only if historical documentation exists to confirm the past presence of the species of interest within the area and if suitable habitat exists within the park and in the region to support its survival.

WIL-4 If it is necessary to regulate animal populations, use methods based on sound principles of ecosystem management that are consistent with the Resource Management Chapters of the Department's Operations Manual (DOM).

WIL-5 Restore and maintain a natural faunal balance through control or removal of exotic animals and remediate their damage to natural habitats.

Sensitive Wildlife Management Goal and Guidelines

Many native wildlife species have declined considerably in the past century, both in California and worldwide. Statewide Department goals include developing and perpetuating sustainable populations of native wildlife species and enhancing, protecting, and maintaining native ecosystems and indigenous flora and fauna. This is especially important in Tomales Bay State Park because of its unique ecosystems and diverse collection of wildlife dependent on these habitats.

Twenty-five wildlife species present in the park have protection status by the state and/or federal government by being designated as Species of Special Concern or Threatened or Endangered

Twenty-five wildlife species present in the park have protection status by the state and/or federal government by being designated as Species of Special Concern or Threatened or Endangered species. These sensitive species play an essential role in the functioning of the ecosystems of the Tomales Bay watershed and their survival depend on the perpetuation of their habitat.

Sensitive Wildlife Management Goal:

Protect and, where appropriate, restore aquatic and terrestrial sensitive species within Tomales Bay State Park and manage for their perpetuation in accordance with state and federal laws.

Sensitive Wildlife Guidelines

WIL-6 Maintain and enhance northern spotted owl and osprey populations and habitat within the park by activities such as monitoring the local population, participating with other agencies in implementing recovery strategies, careful location of recreational facilities, and avoiding tree removal or trail work in spotted owl habitat or around known osprey nesting sites during their breeding season.

WIL-7 Inspect buildings for sensitive species, particularly for bat roosts. If a roost is present or suspected, make an early determination if continued use of the facility by bats is a management objective, then proceed according to Department management guidelines.

WIL-8 Protect and enhance, riparian and wetland habitats, establish an appropriate set back on any development adjacent to these habitats, and work to re-establish natural hydrologic flows.

WIL-9 Improve aquatic habitats in the watershed and in Tomales Bay through the reduction of erosion.

WIL-10 Ensure optimal streamflow patterns to sustain native aquatic communities by limiting the impacts of development where feasible.

WIL-11 Establish appropriate setbacks on development for riparian zones to protect critical habitat for nesting and wintering birds and other species such as the California red-legged frog, Point Reyes Mountain Beaver, and California Freshwater Shrimp.

WIL-12 Consider the needs of sensitive aquatic species in the timing and implementation of any work resulting in streambed alteration or riparian disturbance in order to avoid adverse impacts to these species.

WIL-13 Based on the findings of surveys of in-park barriers to the movement of fish, fresh water shrimp and other invertebrates, investigate the removal of impoundments, the repositioning of culverts and water conveyances, and any other barriers to natural hydrologic flows.

Habitat Linkages (Biocorridor) Goals and Guidelines

Biocorridors are lands held and managed primarily for the purposes of linking larger habitat areas. When so linked, these lands form a continuous vegetative cover facilitating the movement of animals and the dispersal of plants. Protecting linkages within the park, as well as between the park and other wildland areas, is important to maintaining ecosystem health and supporting regional conservation.

Tomales Bay State Park faces several issues in connection with core habitats and biocorridors. The park's land holdings are divided into seven separate units with different amounts and types of habitats in each. While the Department has acquired parcels to improve connectivity with other open space areas, management goals and practices, such as grazing or urban development, on adjacent lands may conflict with or be detrimental to preservation of habitat types on park lands. Certain land uses can

reduce habitat value for some sensitive species or may reduce the amount of core habitat available. Roads and trails can also fragment wildlife habitat. A major influence on fragmentation is the Highway 1 corridor adjacent to or bisecting all the east shore holdings.

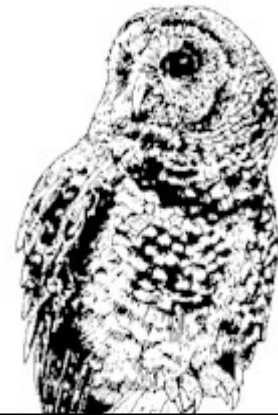
Habitat Linkages Goal:

Preserve, rehabilitate and, as appropriate, establish new effective habitat linkages between the park and other protected lands in order to maintain or increase species abundance and diversity within forest ecosystems, riparian areas, streams, and other wildlife habitat core areas.

Habitat Linkages Guidelines

WIL-14 Establish a program to monitor the condition and effectiveness of habitat linkages. Monitoring may include surveys of plant communities, mammals, reptiles, and amphibians. The effects of human activities, on natural habitats in the park should be evaluated and, where necessary, remedied.

WIL-15 Maintain working relationships with neighboring landowners, such as National Parks and Marin County, and coordinate efforts to identify and preserve habitat linkages.



In California, habitat destruction and fragmentation, and invasion of exotic species are the largest threats to the survival of endangered species

Exotic Animal Species Control Goal and Guidelines

In California, habitat destruction and invasion of exotic species are the two largest threats to the survival of endangered species. Exotic animals can prey upon and out-compete native species. Although this has not been observed at Tomales Bay State Park, it is nonetheless prudent to protect native wildlife from this potential threat.

Exotic Animal Control Goal:

Protect and preserve native wildlife species by monitoring and controlling exotic animals and restoring damaged habitats if recovery will not occur naturally in a reasonable amount of time.

Exotic Animal Control Guidelines

WIL-16 Coordinate with adjacent property owners and governmental agencies to monitor and control exotic animals, such as feral cats, in the park and surrounding areas.



Wildlife Management Studies and Surveys

Develop a unit-wide Wildlife Management Plan that will provide for long-term management of the park's wildlife populations and habitats by addressing areas such as:

- Control of exotic plant and animal species that may have adverse impacts to native wildlife.
- Protection measures for sensitive wildlife populations, which may include re-routing trails, habitat restoration or enhancement, exotic species control, and visitor education.
- Assess cumulative impacts to sensitive wildlife populations in the park.
- Evaluate tidal circulation and freshwater inflow conditions in the diked marshes at Tomasini Point and Millerton Point and evaluate benefits of natural and artificial wildlife habitat.
- Identify barriers in streams to fish, fresh water shrimp and other invertebrates.
- Assess the condition of sensitive species habitats, such as salmonids, black rail, tidewater goby, saltmarsh harvest mouse, and tri-colored blackbird.
- Promote the recovery of the California freshwater shrimp following the guidelines for the USFWS recovery plan.

Cooperate with agencies, organizations, and researchers to develop information on park biodiversity and habitat enhancement needs through activities such as:

- Participate with National Park Service in the "All Taxa Review for Tomales Bay".
- Cooperate in studies of species of local interest and habitat assessments to identify habitat function, enhancement priorities and limiting factors.
- Continue efforts to monitor existing habitats and populations and promoting information sharing among agencies.

Sensitive wildlife species surveys will be conducted during the environmental review process for all park projects that have the potential to impact sensitive species or their habitats including the development of new trails, facilities, and structures.

PARKWIDE GOALS AND GUIDELINES FOR CULTURAL RESOURCES MANAGEMENT

Cultural resources referred to in this general plan consist of important and potentially important prehistoric and ethnographic sites, historic, and ethnohistoric resources, and cultural landscapes. These include, but are not limited to, such features as archeological sites, farmsteads, historic recreation sites, and early transportation networks such as historic roads, trails, and railroad lines.

These known cultural resources define the flow-of-history of the cultural landscape. Protecting and interpreting cultural resources can provide research information that will

help current and future generations understand aboriginal land use, interaction and contact between early Spanish and English explorers and Native Americans, and late 19th century and turn-of-the century settlement patterns and influences by the dominant cultures that inhabited the Tomales Bay area.

Cultural Resources Goal:

To provide an appropriate level of protection, stabilization, preservation, and interpretation of the park's cultural resources, focusing in areas of important archeological and historical significance.

Cultural Resources Guidelines

CUL-1 When known or unanticipated discoveries are made, consult with the Cultural Resources Specialists to determine significance prior to undertaking programs for construction, development, or rehabilitation of developed or undeveloped natural areas. Any project plan concerning restoration, remodeling, adaptive reuse, or non-use of a significant cultural resource must comply with the Secretary of Interior's Standards for the Treatment of Historic Properties.

CUL-2 Where feasible, protect important cultural resources from adverse effects resulting from park use, development of facilities, resource management programs, or natural processes, such as erosion.

CUL-3 Consult as appropriate with interested Native American tribes and groups who have traditional ties to resources within the park to ensure productive, collaborative working relationships, especially when considering management practices, such as vegetation rehabilitation projects, and interpretation involving the park's natural and cultural resources of interest and concern to them.

CUL-4 Review acquisition plans and consider key properties available from willing sellers for preservation of cultural resources including natural and cultural features that reflect the flow-of-history of the Tomales Bay area.



Cultural Resources Studies and Management Plans

- Conduct a comprehensive survey and inventory of the cultural resources within the park's boundaries, including archaeological, historical, and landscape features and sites. The park areas on the east side of Tomales Bay should be investigated for their value as part of a larger cultural setting that extends along the highway from Point Reyes Station to Tomales. Between the highway and the bay, clusters of small communities, maritime activities and remnants of early ranches create a distinct landscape that is interspersed with the natural environment, and gives the area its unique character.

- Develop an inventory, mapping, and database for those cultural resources within the park that may be eligible for inclusion in the National Register of Historic Places and/or the California Register of Historic Resources.
- Prepare a park-wide Cultural Resources Management Plan (CRMP) that establishes an ongoing management process to record and develop findings of significance and treatments for park cultural resources that are historically or archeologically important.

PARKWIDE GOALS AND GUIDELINES FOR INTERPRETATION AND EDUCATION

Like the hub of a wheel, interpretation and education can connect and integrate the many aspects of Tomales Bay State Park. Interpretation and education promote resource protection and appreciation, visitor safety, cultural and natural appreciation, recreational enjoyment, and understanding of management and maintenance practices. Interpretation can orient the visitor to where they are in the park and what is available for them to see and do. It can also educate visitors how to help preserve the resources they came to enjoy and have a safe visit. At this park, interpretation can help integrate the park's seven separate parcels by emphasizing the bay that connects them all geographically and thematically.

OVERALL INTERPRETATION GOAL, GUIDELINES, AND PLANS

Overall Interpretation Goal:

To increase visitor understanding, appreciation, and enjoyment of the natural, cultural, and recreational resources of the park and Tomales Bay.

Overall Interpretation Guidelines

INT-1 Interpret the cultural, natural, aesthetic, and recreational resources, features, and values associated with Tomales Bay State Park.

INT-2 Provide a variety of interpretive programs that reaches out to the state's diverse population.

INT-3 Partner and coordinate with other agencies to provide interpretation and education of the West Marin area.

INT-4 Provide interpretive messages throughout the park while avoiding visual clutter that distracts from the visitor's experience.

INT-5 Expand the park's interpretive and educational programs, and facilities, to keep pace with increases in the public's demand for high quality recreation.

INT-6 Interpretive programs should integrate the park's "spirit of place," natural aesthetics, and sustainable design.



Interpretive Plans

The interpretive goals and guidelines in this general plan provide general interpretive direction. Future interpretive management plans will provide more specific direction to the park's interpretive programs and facilities.

- Prepare an interpretive prospectus to define environmental influences and visitor expectations and further delineate the park's interpretive themes, periods, facilities, and media. The prospectus should propose interpretive activities and collections management policies and make recommendations on interpretive concessions, cooperating associations, and interpretive priorities. It also analyses the park's interpretive resources, including physical and biological features and recreational activities, provides a historical narrative, and suggests needed research and interpretive objects.
- Prepare interpretive plans or exhibit plans as needed to define a specific interpretive development project. The scope of an interpretive plan can include: an analysis of existing conditions; intended audiences; special concerns (such as culturally sensitive subjects, accessibility, staffing, safety and security); resources (such as collections, graphics, landscape features, and historic structures); goals and objectives; and interpretive themes and periods. The plan makes specific recommendations for interpretive components such as storyline, media, design concepts, interpretive objects, and schematic designs.

INTERPRETIVE THEMES

Park Unifying Theme

Complex and powerful geological forces continue to shape Tomales Bay and its ever-changing environment of diverse landscapes, unique ecosystems, and diverse cultures.

Unifying Theme Guidelines

INT-7 Interpret the dynamics of this area, including: geological history, erosion and sedimentation, seasonal fluctuations of fresh water and salinity, tidal exchanges, nutrient cycling in estuaries, weather changes, wildlife movements and cycles, and seasonal changes in vegetation.

INT-8 Interpret Tomales Bay's watershed and the aquatic life dependent on its waters and tidal flows.

INT-9 Interpret the natural history of the area's wildlife.

INT-10 Promote stewardship of Tomales Bay and its important natural, cultural, and recreational values.

INT-11 Interpret the complexity of the twenty plant communities with emphasis on the two sensitive communities of the Coastal Terrace Prairie and Northern Coastal Marsh and the two dominant communities of Bishop pine on the western side and the grassland on the eastern side. Interpret plant species unique or rare in this area.

INT-12 Help the public enjoy themselves without harming the complex, dynamic, and sensitive environment of Tomales Bay and the park.

San Andreas Fault Theme:

The geological movements of two colossal pieces of the earth's crust define the San Andreas Fault which is evident in the long and straight submerged valley of Tomales Bay.

San Andreas Fault Theme Guidelines

INT-13 Interpret how geological forces shaped, and continue to alter, the Tomales Bay area and its potential for geologic hazards such as earthquakes and landslides.

INT-14 Interpret the geological and ecological effects of the San Andreas fault, including: the raised water table, the uniqueness of fault-caused soil substrates, how topography moderates the weather and affects plant communities and the ecosystems around the bay.

Environmental Stewardship Theme:

Tomales Bay's rich cultural history and delicate balance of ecosystems require all of us to help protect its animals, plants, and habitats.

Environmental Stewardship Theme Guidelines

INT-15 Show how people have cared for this land and bay. Include stories such as the Coast Miwok's reverence of the land, the establishment of the park by concerned local citizens, and current efforts to preserve the natural and scenic values of the Tomales Bay area.

INT-16 Interpret how different cultural views, land uses, and changing technology create different lifestyles and impacts. Examples of groups with differing approaches include: the Coast Miwok, early ranchers and farmers, mariners, railroad developers, oyster cultivators, and tourists.

INT-17 Promote an understanding of why it is important to protect sensitive plant populations and control invasive exotic plants.

INT-18 Interpret the role of wildfire in the area, including: wildfire/urban interface concerns, fire management used by the Coast Miwok, and modern fire management techniques.

Coast Miwok Theme:

The Coast Miwok and other early Native Americans have lived on the shores of Tomales Bay for hundreds of years enjoying its mild climate, and thriving on its productive ecosystems.

Coast Miwok Theme Guidelines

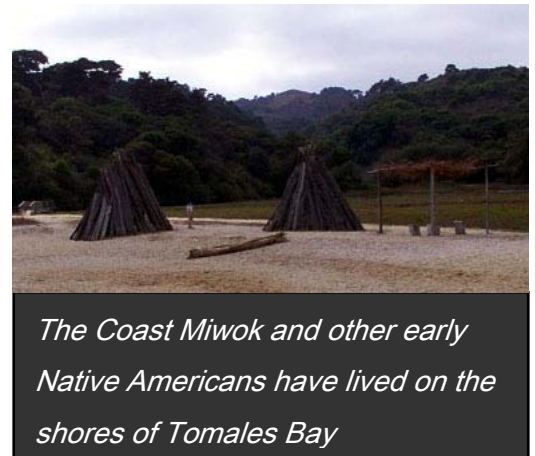
INT-19 Continue to provide the Environmental Living Program designed as an educational experience featuring the Coast Miwok lifestyle.

INT-20 Interpret how the Coast Miwok interacted with the life, lands, and waters of the Tomales Bay area. Interpret the relatively large number of Miwok habitation sites in the area (an example is that nearly every freshwater stream entering Tomales Bay supported a Miwok settlement for at least part of the year).

INT-21 Interpret the trade items and trading network of the Coast Miwok.

INT-22 Interpret the fact that the locations of the park's Native American archeological habitation sites show that these early peoples were attracted to the streamside, beach, and estuary environments that still attract visitors today. Interpret what we've learned of the early Native American lifestyle from these middens and what visitors can do to protect these midden sites.

INT-23 Interpret early European/Miwok contact from Francis Drake's landing of the Golden Hinde in 1579 to the Spanish/Mexican era missionaries and the results of this contact on the native peoples. Interpret the fact that Coast Miwok people live in the area



today and have ceremonial dances at Point Reyes National Seashore's *Kule Loklo* village.

Spanish, Mexican, and American Settlement Theme:

The Spanish, Mexican, and American Periods brought a rich mix of cultures and lifestyles to the Tomales Bay area.

Spanish, Mexican, and American Settlement Guidelines

INT-24 Interpret the Spanish and Mexican land grant ranching economy and culture in the area.

INT-25 Interpret the American Period history of the Tomales Bay area up to the present, including ranching, fishing, oyster cultivation, the railroad years, early roads, the early Inverness vacation homes, and the formation of the park after World War II.

INTERPRETIVE COLLECTIONS GOAL AND GUIDELINES

Museum collections will likely play a minor role at Tomales Bay State Park. At present there are no formal museum collections in the park.

Interpretive Collections Goal:

The Department's museum objects should reflect the purposes and subject areas of the parks in which they are found.

Interpretive Collections Guidelines

INT-26 Objects may be acquired and maintained: 1) to preserve original elements of the cultural and natural environment; 2) to preserve documentation of people, events, and cultural or natural features that are central to the park's purpose, and 3) to support the interpretation of themes that are put forth in this plan or in an interpretive prospectus or plan.

INT-27 If museum collection needs are identified during future interpretive planning, they will be incorporated into an approved Scope of Collections Statement.

INT-28 Collections acquired for or maintained at the park will be managed in accordance with the policies and procedures outlined in Chapter 20: Museum Collections Management of the Department's Operations Manual.

PARKWIDE GOALS AND GUIDELINES FOR RECREATION ACTIVITIES AND FACILITIES AND VISITOR EXPERIENCE, SERVICES, AND SAFETY

Visitor services provide the means for allowing the public to enjoy and benefit from the resources and recreational opportunities provided at the park. Both state park and concession-offered visitor services should provide environmentally-appropriate and enjoyable recreation opportunities for the widest possible range of visitors with respect to age, ethnicity, religion, race, income, education, and physical ability.

This General Plan assumes that projected regional population increases will result in visitation increases at the park. A major purpose of this plan is to provide direction for appropriately meeting some of this demand while protecting the park's resources and quality of visitor experience from deterioration. Changing demographics and use patterns will require ongoing periodic evaluations of park operations and resource management programs.

Both state park and concession-offered visitor services should provide environmentally-appropriate and enjoyable recreation opportunities for the widest possible range of visitors with respect to age, ethnicity, religion, race, income, education, and physical ability.

PUBLIC ACCESS AND CIRCULATION GOALS, GUIDELINES, AND PLAN

West Marin's large expanse of public open space and scenic beauty attract local, regional, state, national and global visitation.

The park's seven dispersed parcels complicate access and circulation to and within the park. With the exception of the Heart's Desire area, these separate parcels currently lack connections, unity, and identity as a state park. Opportunities exist to physically and visually connect these parcels to each other and to regional public parks and open spaces and to develop a sense of arrival and park unity.

State Highway 1 is designated as a scenic highway and is a well-traveled bicycle and auto-touring route. Park properties on Tomales Bay's east shore, located along Highway 1, currently offer minimal access and limited visitor experience opportunities. In addition, park properties located on the east shore are the first state parkland encountered in West Marin by travelers approaching from the north along Highway 1. The park can provide additional access to properties on the east side of the bay and can serve as a northern gateway to West Marin.

This plan also recognizes physical affects caused by excessive vehicular traffic and encourages alternative modes of transportation to the park.

Public Access and Circulation Goal:

Establish a pattern of circulation and access for all visitors, to include integrated and

efficient multi-modal transportation, that allows for clear choices for visitor arrival, departure, and travel throughout the park, while creating a sense of place and conveying the park image.

Public Access and Circulation Guidelines

ACC-1 Coordinate with Caltrans and Marin County to assure that alterations and maintenance of roadways and signage will result in easy, safe and enjoyable driving experiences for motorists, consistent with park resource management goals and guidelines.

ACC-2 Explore options to promote east shore properties along State Highway 1 as a northern gateway to West Marin utilizing signage, information, interpretation, and facilities.

ACC-3 Design circulation and access routes to separate vehicular and non-vehicular traffic as much as possible in order to enhance non-vehicular modes and reduce potential conflicts.

ACC-4 In order to minimize increases in traffic and the demand for parking, provide facilities and design features (e.g., bus pullouts, transit shelters, bus schedules) that encourage and support alternate modes of transportation to the park, including pedestrian, bicycle, bus, shuttle and boat.

ACC-5 Emphasize walking, biking, and non-motorized boating as the preferred modes of transportation to and within the park.

ACC-6 Recognize Tomales Bay as a possible means of unifying public use areas within the non-contiguous portions of the park. Explore options for accommodating water-based transit services to and from the park by way of Tomales Bay.

ACC-7 Explore, with Metropolitan Transportation Commission, Marin County Public Works Department, Marin County Congestion Management Agency, West Marin Stagecoach, Golden Gate Transit, National Park Service and other transportation providers, the feasibility of instituting an integrated transit service that would link and provide connections to/from the park to/from key activity centers within West Marin (e.g. shuttle services, bus service). Coordinate with transit providers to provide more frequent transit service to the park, including peak season, weekends and holidays when visitation to the park will be highest.

ACC-8 Pursue shared parking arrangements with Point Reyes National Seashore and Marin County.

ACC-9 Base parking demand projections on typical use patterns, rather than worst case or special event scenarios, and design and implement parking improvements in response to actual use and demand.

ACC-10 Explore alternatives for accommodating special event parking conditions, such as the use of unpaved overflow parking areas, satellite parking areas, and special event shuttle service.

ACC-11 Evaluate signage associated with park visitation and signs on public roads leading to the park to help create a park identity, orient visitors, identify destinations, interpret park resources, and provide appropriate warnings of potential hazards, and recommend appropriate modifications to the existing sign program.



Emphasize non-motorized modes of transportation to and within the park



Roads and Trails Management Plan

The Roads and Trails Management Plan will evaluate the park's entire road and trail system and guide the placement, relocation, management, or removal of roads and trails located within the park. Emphasis should be placed on creating opportunities for visitors to enjoy the diverse topography, biotic communities, and scenic views at the park; examining possible regional connections, providing emergency, landowner and maintenance access routes; and protecting park resources. The plan should include a comprehensive inventory of all roads and trails within the park, an evaluation of their condition, and recommendations for future management.

TRAILS GOALS AND GUIDELINES

Trails Goal:

Provide appropriate trails which will provide regional connections and allow visitors to access, enjoy, and learn from park trail experiences.

Trails Guidelines

TRL-1 Trails should provide for public access within the park and to adjacent regional and statewide trail systems, with priority connections to Point Reyes National Seashore, Golden Gate National Recreation Area, California Coastal Trail, Bay Area Ridge Trail and San Francisco Bay Trail. The Department should support regional and state trail objectives and coordinate with other land management agencies in West Marin to

Trails should provide for public access within the park and to adjacent regional and statewide trail systems.

evaluate and monitor resource conditions, and share information to develop open space management programs and multiple use trail plans on a regional and state scale.

TRL-2 Work with local jurisdictions to enhance multiuse trail connections from adjacent communities into the park.

TRL-3 Encourage a convenient and attractive system of multi-use trails which link disjointed areas of the park into an integrated whole.

TRL-4 Future trails planning and construction should include the Department's specifications and policies concerning trail construction and maintenance, and be coordinated with applicable soil erosion, sediment and water quality regulations.

RECREATIONAL ACTIVITIES, FACILITIES, AND VISITOR EXPERIENCE GOALS AND GUIDELINES

Tomales Bay State Park has a number of popular existing recreational opportunities and the park also has substantial unrealized recreational potential, including opportunities in the recently-acquired lands on the east shore.

Recreational Activities, Facilities, and Visitor Experience Goal:

Provide a variety of recreational opportunities that will allow California's diverse population to enjoy themselves and to refresh themselves physically and spiritually in a healthful outdoor recreation setting. New facilities development will strive to minimize negative impacts on the park's natural, cultural, and aesthetic resources.

Recreational Activities, Facilities, and Visitor Experience Guidelines

REC-1 Plan recreational opportunities within a regional context and in coordination with federal, state, and county park agencies to promote the best regional mix of recreational facility types, sizes, and locations.

REC-2 Provide for activities at the park that expose visitors to the sights, sounds and experiences of Tomales Bay and its surrounding landscape including but not limited to hiking, biking, kayaking, picnicking, camping, nature study, and the enjoyment of solitude.

REC-3 Provide accessible facilities (e.g. structures, trails, etc.) in coordination with the Federal Guidelines of the Architectural and Transportation Board, Accessibility Guidelines for Recreation Facilities and Title 24, CCR, Part 2, California Building Code for Building Construction standards; and Department standards for accessibility.

REC-4 Enhance the recreational use of watercraft on Tomales Bay waters by providing safe and convenient water access facilities. The character of access accommodations (e.g., ramps, steps, gravel/sand beach, etc.) and their design shall be responsive to both the specific setting and the nature of the projected use. Consider existing uses, such as adjacent state water bottom leases for aquaculture, when evaluating watercraft access points on Tomales Bay.

REC-5 Technological innovations and recreation trends may generate interest in types of experiences and activities not currently available in Tomales Bay State Park and the surrounding region (examples from the past few decades include board sailing and mountain biking). Consider accommodating such innovative recreational experiences and activities as they arise if appropriate studies determine their compatibility with existing park and regional recreational, land use, and resource management goals.

CONCESSIONS GOALS AND GUIDELINES

Tomales Bay State Park currently does not offer any visitor services by private concessionaires. However, there may be opportunities to utilize concessionaires in the future to provide recreational opportunities or services that the Department is not able to provide.

Concessions Goal:

If the Department is not able to provide a variety of appropriate potential recreational opportunities in the park, concessionaires can be utilized to provide these opportunities.

Concessions Guidelines

CON-1 Develop a plan that recommends potential concession opportunities for the park. Keep in mind the park's "spirit of place," aesthetic values, and the resource goals and guidelines outlined in this General Plan when identifying potential concessions.

CON-1 Consider concession opportunities in the Marconi Cove area such as kayak/small boat rentals, campground operations, and/or a snack/gift shop business.

HAZARDS AND SAFETY GOALS AND GUIDELINES

The park lies within an area of high seismic activity. Earthquake-induced damage resulting from ground shaking, ground surface rupture, liquefaction, lateral spreading, and earthquake-induced water waves (tsunamis, and seiches) are possible at the park.

Most soil units within the park have moderate to high erosion potential. Landslides and debris flows are common in the soils derived from the Franciscan mélange on the east side of Tomales Bay. The granitic-derived soils on Inverness Ridge are less susceptible to landsliding, though debris flows have occurred during extremely heavy rainfall events. Unstable soils and certain land use practices can cause accelerated erosion, can

exacerbate existing landslides, and contribute sediment to Tomales Bay, an impacted watershed.

While more prevalent along the coastal bluff of the Point Reyes Peninsula, some areas within Tomales Bay may be susceptible to coastal bluff erosion. Some erosion is naturally occurring, but may be caused or accelerated by human land use practices. Flooding is possible along the shoreline of Tomales Bay and within the estuaries and creek mouths. The flooding may result due to excessive rainfall and runoff events, or due to seismically-generated waves (tsunami or seiche).

Earthquake-induced damage resulting from ground shaking, ground surface rupture, liquefaction, lateral spreading, and earthquake-induced water waves are possible at the park

Hazards and Safety Goal:

Provide for public safety and prevent structural failures due to seismic activity, landslides, flooding, and erosion.

Hazards and Safety Guidelines

SAF-1 Use interpretive media to educate visitors about natural hazards and how to avoid danger.

SAF-2 The siting and design of permanent structures and major development projects may include professional geological evaluations, site investigations, and soil testing. These should be prepared early in the project planning process in order to evaluate the geologic conditions and determine the appropriate facility location and design. The investigations may consist of existing literature research, reconnaissance geologic mapping, aerial photo surveys, and geotechnical investigations.

SAF-3 Employ management actions that minimize erosion and prevent the creation or reactivation of landslides to reduce the risk of erosion hazards to people and resources. The Geologic Hazards Map shows areas rated for susceptibility to landslides.

SAF-4 In areas susceptible to liquefaction (as identified on the Geologic Hazards Map), new structures should be avoided.

SAF-5 Development of permanent structures or campgrounds in areas subject to flooding should be avoided. This protects the public from flood hazards and preserves the natural riparian and tidal/marsh ecosystems.

SAF-6 In accordance with the 1972 Alquist-Priolo Earthquake Fault Zoning Act, any structures for human occupancy (occupancy rate greater than 2,000 person hours/year) cannot be constructed over the active fault or within 50 feet of an active fault trace. All

structures in the park should be constructed to currently acceptable seismic design criteria according to the Uniform Building Code.

SAF-7 Develop specific actions to address public safety issues regarding natural hazards. As necessary, perform slope stability and soils studies in proposed public use areas, including monitoring geomorphic change where appropriate and feasible. The intent is to understand the geologic processes affecting public use sites and where resources might be at risk. When possible, data collection and mapping of geologic information should be maintained in a database with GIS-mapping procedures utilized.

SAF-8 In the event that any building in the park that is found to contain asbestos is removed or remodeled, or any other hazardous materials are found in the park, including during construction and maintenance activities, all regulations for hazardous material transport, use, and disposal will be adhered to.

WILDFIRE SAFETY AND MANAGEMENT GOALS, GUIDELINES, AND PLAN

Wildfire can cause the loss of human life and property and subsequent fire suppression tactics can have long-lasting environmental impacts. The park is located within a wildland-urban interface where the risk of wildfire is high. It is therefore essential to develop community partnerships and interagency cooperation to reduce this risk, especially where residential areas border State Park property. One such area is the town of Inverness that lies close to State Park boundaries and is adjacent to a forest dominated by Bishop pine.

Wildfire Safety Goal:

Anticipate wildfires and plan strategies to preserve sensitive park resources, ensure human safety, and protect property.

Anticipate wildfires and plan strategies to preserve sensitive park resources, ensure human safety, and protect property

Wildfire Safety Guidelines

FIR-1 Coordinate with appropriate fire suppression agencies, such as the California Department of Forestry and Fire Protection (CDF), the National Park Service, and county and community volunteer fire departments.

FIR-2 Accomplish wildfire protection and suppression activities in accordance with a Memorandum of Understanding between the Department and the appropriate Federal and State agencies.



Wildfire Management Plan

The Fire Management Plan will specify emergency actions for the protection of public safety, park structures, and adjacent landowner structures. In addition to emergency actions the plan should specify strategies for pre-suppression, and suppression and the prevention of wildfire damage such as the creation of defensible space around structures, wildfire education programs and park fire regulations. It should identify modified fire suppression methods and ways to protect sensitive park resources. This plan will also address Prescribed Fire Management Programs designed to achieve ecosystem and cultural landscape management goals. Prescribed Fire Programs should include, but not be limited to, the management of the closed-cone Bishop pine alliance and open grassland communities.

PARKWIDE GOALS AND GUIDELINES FOR THE PARK'S AESTHETIC QUALITIES AND SPIRIT OF PLACE

Every visitor has a unique experience in the park because each brings their own expectations, values, and judgments to it. We approach the park with our own unique sensitivities to its aesthetics, its ever-changing sights, sounds, odors, textures, and tastes. Some visitors are attuned to the unique "spirit of place" that this area possesses with its centuries of habitation by Native Americans and its bay forests, streams, estuaries, wildlife, and constantly changing weather conditions.

In order to maximize positive visitor experiences and to help create long-lasting, pleasant memories of time spent at the park, existing aesthetic values and the park's spirit of place should be recognized so that the Department can provide visitor facilities and programs that reflect, preserve, protect, and enhance these values. Though every visitor's experience is necessarily subjective and unique, the Department can identify general aesthetic values that are so important that if they disappeared the park's character would be fundamentally changed.



The Department can identify general aesthetic values that are so important that if they disappeared the park's character would be fundamentally changed

AESTHETICS, FACILITIES DESIGN, AND SPIRIT OF PLACE GOALS AND GUIDELINES

Aesthetics, Facilities Design, and Spirit of Place Goal:

Identify the distinctive aesthetic qualities that help give Tomales Bay State Park its unique "spirit of place." (See the Introduction section, "Spirit of Place," and **Appendix K**

for more information on this topic.) Integrate the park's defined positive aesthetic values and spirit of place into the design of park facilities and programs and use them as a guide to design appropriate renovation and maintenance programs for existing facilities. Preserve the park's identified spirit of place as much as possible.

Aesthetics, Facilities Design, and Spirit of Place Guidelines

AES-1 The park's overall aesthetic qualities, both positive and negative, and spirit of place should be clearly identified. See **Appendix K** for a recommended process.

AES-2 At the time of facility and program development, define the project site's unique aesthetic qualities and spirit of place. See **Appendix K** for a recommended process.

AES-3 Development of facilities and park resource and interpretive programs should evaluate and consider incorporating potential positive sensory and aesthetic impressions and be compatible with the park's identified spirit of place.

AES-4 Park staff should recognize the importance of positive aesthetic and spirit of place values to visitor experience and incorporate these values in making daily management, maintenance, and site and/or structure modification decisions, both large and small.

AES-5 Apply the concept of "positive first impressions" and identified park aesthetic qualities not only to entrance areas in the park but to every designed element in the park. Reduce, simplify, organize and present the elements that will exist together in a specific area in a clear and uncluttered way.

AES-6 Building and structure design should reflect and incorporate the native qualities of the individual building site; be integrated into existing landforms; preserve and showcase views; use muted colors that reflect the natural surroundings; and take advantage of (or screen) ephemeral conditions (weather, wind, sunlight, etc.) in structure design to help create positive visitor experiences.

AES-7 Where possible, visually screen parking lots, roads, and operations structures from other public use areas. Use plantings, rocks, elevation change, and other methods as appropriate that either use or mimic natural elements to minimize negative visual impacts of these facilities. Road alignments throughout the park, except those having historical significance and those that cannot be modified, should hug natural terrain contours and give visitors a positive aesthetic experience while traveling through the park.

AES-8 To help preserve the values of silence and natural sounds, locate service and maintenance functions away from public areas. Create space between interpretive stops, day use areas, and campsites so that natural (not human) sounds dominate. Heavily-traveled roadways should be kept apart and downwind from visitor use areas, if possible. Enforce park noise standards, especially during night hours.

AES-9 Promote positive visitor experiences by engaging visitors with positive natural fragrances and protecting them from odors from restrooms or trash bins. Consider creating positive odor experiences such as a native plant interpretive trail that allows close access for touching and smelling plants, which can create an enduring park memory.

AES-10 Where appropriate, emulate visual and aural standards, and any other aesthetic standards, contained in guiding documents, such as the Marin Countywide Plan and local coastal and community plans, are followed both in the park and in and on surrounding land and water bodies that are identified as having important aesthetic impacts on the park.

AES-11 Native Californians in the region had a sustainable way of life for centuries before Euro Americans arrived. This way of life provided land and resource management practices that preserved the park's positive aesthetic qualities and spirit of place. When appropriate, park staff should consider consulting with local indigenous populations in order to better understand and integrate these centuries-old sustainable practices into new park projects and programs in order to help preserve existing natural and aesthetic values in the park.

PARKWIDE GOALS AND GUIDELINES FOR SUSTAINABLE DESIGN, CONSTRUCTION, AND MAINTENANCE

A sustainable facility or program creates low levels of negative impacts to natural or cultural resources, can be maintained with materials that are non-toxic to people or the environment, and contains materials that are recyclable.

Using the concept of sustainability in the siting, construction, and maintenance of facilities and within natural and cultural resource programs for the park is an appropriate concept for the Department to consider. Sustainable projects and programs can contribute to the Department's mission to preserve important resources, create a healthier environment, and help create less intensive, more self-sustaining programs to maintain and enhance park facilities.

A sustainable facility or program creates low levels of negative impacts to natural or cultural resources, can be maintained with materials that are non-toxic to people or the environment, and contains materials that are recyclable

Sustainable Design Goal:

Use sustainable design in the siting, construction, and maintenance of park facilities, including buildings, parking lots, campgrounds, day use areas, and trails; and in natural and cultural resource programs.

Sustainable Design Guidelines

SUS-1 Where possible, use natural, renewable, indigenous, and recyclable materials, and simple-to-maintain and energy-efficient design.

SUS-2 Minimize disturbance to the park's character and aesthetics, natural and cultural resources, skyline, and the dark night sky. For example, consider constructing buildings partially below grade and/or roofed with turf or other natural materials to limit viewshed impacts, and to take advantage of the natural insulating properties of soil, reducing long-term energy costs.

SUS-3 Use cost/benefit analysis over time to help justify the use of more costly sustainable construction materials and/ or design.

SUS-4 Through interpretive programs, explain to the public the visible (and less visible) examples of sustainable design, construction, and maintenance in the park.

SUS-5 Minimize impacts to soils, vegetation, and air and water quality from grading and filling of terrain; from construction equipment, practices, and materials; and from mechanical equipment or chemical use in facilities maintenance and resource management programs.

PARKWIDE GOALS AND GUIDELINES FOR PARK OPERATIONS

Park Operational and Staff Housing Goal:

Provide needed and appropriate services and facilities for park security, resource protection, visitor access and services, public health and safety, park administration, maintenance, and staff housing in the most efficient, effective, and environmentally-sensitive way.

Park Operational and Staff Housing Guidelines

OPS-1 Strive to ensure that operational and maintenance budgets keep pace with proposed development.

OPS-2 Consistent with the District staff housing study and proposals of this General Plan, provide for staff housing needs in areas that require staff security presence and

which help attract and keep qualified staff in this expensive housing market, and to minimize impacts on the local housing market. Staff housing sites should be visually screened and avoid displacing important public land and facility uses.

OPS-3 Maintain and improve as necessary existing housing in the Heart's Desire Area and at Millerton Point.

OPS-4 Possibilities for locating future staff housing include (in priority order for future study and negotiation where necessary): 1. Marconi Conference Center (some units near maintenance yard); 2. Millerton Point (1 unit hidden behind cypress trees south of existing mobile home); and 3. North Dream Farm property (a few units might be possible here if other possibilities prove unfeasible and if environmental and safety concerns can be adequately addressed).

OPS-5 Locate maintenance facilities where they can most efficiently serve park maintenance needs, where these sites can be visually screened, and where they do not displace important public land and facility uses. A new maintenance facility may be needed to serve the east shore park areas after they are developed. One possibility is to negotiate with the Marconi Conference Center to share maintenance facilities or build a separate maintenance facility at the Marconi Conference Center to serve Tomales Bay State Park's east shore properties.

OPS-6 To promote air quality in the region, appropriate campfire restrictions will be identified and established, through coordination with the Bay Area Air Quality Management District (BAAQMD), in conjunction with the development of overnight campgrounds at the park. Restrictions could limit campfire use during periods designated by the BAAQMD as "No Burn Days."



Staff Housing Study

A staff housing study should be conducted to determine the feasibility of providing new staff housing and an analysis of the best location(s) for new housing.



Maintenance Facility Study

A study should be conducted to determine the best way of providing maintenance services for the proposed park facilities along Highway 1, and to determine the best locations for any new maintenance facility.

PARKWIDE GOALS AND GUIDELINES FOR COMMUNITY AND INTER-AGENCY RELATIONS

COMMUNITY RELATIONS GOAL AND GUIDELINE

Community Relations Goal:

Maintain and enhance positive relations and communications between State Parks and neighboring communities and landowners towards meeting common goals, including security, safety, aesthetic and resource protection, and recreational opportunity.

Encourage and support park staff in coordinating with local communities and to respond positively to statewide and local concerns about the park

Community Relations Guideline

COM-1 Encourage and support park staff in coordinating with local communities and to respond positively to statewide and local concerns about the park.

PARK AND COMMUNITY LANDS INTERFACE GOAL AND GUIDELINES

The lands that surround Tomales Bay State Park's properties are used for a variety of purposes by various owners. There are issues that affect landowners on both sides of any property boundary. The park's unique cultural, natural, aesthetic and recreational resources would be best preserved and enhanced through ongoing dialogue and cooperation between Department staff and adjacent private property owners and organizations responsible for managing land uses around the park.

Park and Community Lands Interface Goal:

Work toward establishing and maintaining lands surrounding the park's cultural, natural, aesthetic and recreational resources as protection against adverse environmental impacts on those resources.

Park and Community Lands Interface Guidelines

COM-2 Seek cooperative agreements with adjacent landowners, neighbors, and local jurisdictions responsible for zoning and land use management to provide for needed open-space buffer areas adjacent to existing sensitive park resources.

COM-3 Consider acquiring neighboring properties or establishing conservation easements from willing sources to serve as open-space buffer areas against negative impacts on park resources.

REGIONAL PLANNING GOAL AND GUIDELINES

Regional Planning Goal:

Enhance interagency coordination concerning the regional planning and management of ecological, biological, recreational, cultural, aesthetic, and educational resources to implement a more efficient, effective, cooperative, and holistic resource and recreation vision.

Regional Planning Guidelines

COM-4 Continue Department participation in regional planning forums such as the 2002-03 *ad hoc* “West Marin Planners Group” (consisting of planners from Marin County, National Park Service, State Parks, and the Tomales Bay Watershed Council) to coordinate recreation and land use issues. State Parks should also work with other agencies, such as The Gulf of the Farallones National Marine Sanctuary, to coordinate regional resource and recreation planning, development, and management.

COM-5 Coordinate regional resource and recreation planning, development, and management issues such as trail connections, water and boat access, the Highway 1 scenic corridor and wayside stop access points, camping, land acquisition, water quality, commercial aquaculture, wildfire and prescribed burning issues, exotic plants and animals, biocorridors, traffic issues, and the scenic and aquatic resources of Tomales Bay. State Parks will coordinate with appropriate agencies to address the complex issues of Tomales Bay recreation, water quality, and wildlife preservation. Some of the outstanding issues include: boating access, sanitary facilities, shoreline camping, noise, and disturbance of marine mammals and seabirds.

PARK-WIDE GOALS AND GUIDELINES FOR ACQUISITION

Tomales Bay State Park, like most other California State Parks, has grown over time. Land acquisitions have added recreational opportunities and natural and cultural resources to the park for visitors’ enjoyment as well as for preservation and management of these resources.

Land Acquisition Goal:

Increase recreational and resource management opportunities, preserve the aesthetic values, and increase operational efficiencies within the park through a land acquisitions program.

Land Acquisition Guidelines

ACQ-1 The Department should consider acquiring any land available from willing sellers that would expand opportunities for recreational facilities and activities, enhance

preservation and management of important natural and cultural resources, preserve and enhance the aesthetic values, or increase operational efficiencies in the park.

ACQ-2 Coordinate with regional public and private recreation and natural resource management providers to encourage acquisition of parcels that promote connectivity between various agencies' properties. One possible way of doing this is to cooperate in supporting the vision of the California Coastal Trail around Tomales Bay. This approach to land acquisition will strengthen the management and development goals of each agency and provide the public with enhanced recreational and resource protection programs in the region.

ACQ-3 Properties suitable for use or development as staff housing are also important for potential acquisition. Land exchanges or new acquisition from willing sellers could be considered to acquire properties suitable for accommodating staff housing needs, either through adapting existing structures or building new structures on such land.

PARK AREA MANAGEMENT VISIONS AND GUIDELINES

The recommended management approaches and guidelines for each park area complement the broader view presented by the *Parkwide Goals and Guidelines*. *Area Management Visions and Guidelines* provide more focused direction to the five planning areas. Most of the preceding park-wide goals and guidelines also apply within all of the park areas so those guidelines will not be repeated in this section. Parkwide concerns such as the protection and preservation of natural ecosystem elements and processes, including protection for listed and special status species and important cultural features, will be integral components in the management of all of the areas.

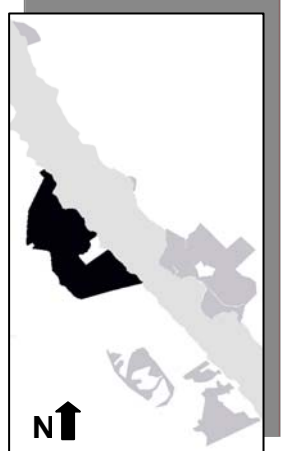
This plan groups the park's seven separate land parcels into five distinct planning areas. The west shore areas include (from north to south) the **Heart's Desire Area** and the **Inverness Area**. The east shore areas include (from south to north) the **Millerton Area**, the **Marconi Cove Area**, and the **North Marshall Area**.

Each area will be described following the same outline. First there will be an *Area Management Approach* which establishes the management intent for each area. This approach covers natural, cultural and aesthetic resource protection and desired visitor experiences and recreational and educational opportunities. Next are the *Area Guidelines* through which the plan proposes to achieve this vision in this area.

HEART'S DESIRE AREA

HEART'S DESIRE AREA MANAGEMENT VISION

The Heart's Desire Area will continue to be managed predominately for its natural and non-mechanized recreation values. The area's natural vistas, native wildlife and plants, marine life, silence, and dark night skies are invaluable qualities to be protected. Natural estuarine processes will be maintained and reestablished where possible. Sensitive plants and animals will be given special protection. Natural fire and vegetation succession processes will be reestablished as much as possible while protecting park visitors, staff, facilities, and neighbors from wildfire. Bishop pine regeneration will be reestablished and maintained in the Jepson Grove and other area locations. Archeological sites and their associated natural ecosystems will be preserved and interpreted as an integrally-related system. Heart's Desire Beach will continue to be the only beach with beach-level parking. Indian, Pebble, and Shell Beaches will be managed as "walk-in" beaches with natural estuarine processes and ecosystems.



The entrance and fee collection area will operate efficiently for visitors and staff, and campground access, registration, maintenance, and enforcement will be efficient. Public use areas and park maintenance, staff housing areas, and operation and administration functions will be segregated as much as possible.

Visitors will find relaxation, rejuvenation, family fun, physical activity, education, and inspiration in this area's natural and developed areas. Visitors will continue to enjoy the sense of refuge and escape offered by the undeveloped "walk-in" beaches and the Jepson and Johnstone Trails. Visitors will continue to enjoy the developed day-use facilities for beach recreation and picnicking at Heart's Desire Beach. Visitors can picnic and camp as individuals, as families, or as organized groups. Visitors will be able to launch cartop non-motorized watercraft. Watercraft users can launch from Heart's Desire Beach to explore the bay and return to their car. The general public will be able to learn about the park's Native American and environmental values through a small museum and other interpretive media and programs. School groups will continue to enjoy and learn from the Miwok Living History Program at Indian Beach. Hikers will be able to hike between the park's Heart's Desire Area and the trails of Point Reyes National Seashore.

HEART'S DESIRE AREA GUIDELINES

HD-1 Jepson Grove Preservation

Preserve and enhance the forest structure and age classes of the Jepson Grove/Bishop pine forest and forest growth by improving *Pinus muricata* growth. Investigate the use of both low-intensity prescribed fire and mechanical means to create openings allowing for natural seedling establishment. Create more open views through the forest floor from

the trails to enhance aesthetic qualities. Install appropriate directional and interpretive signing in the Jepson Grove. Carry out all activities in accordance with a vegetative management plan.

HD-2 Maintain minimally-developed “Walk-in” Beach Opportunities

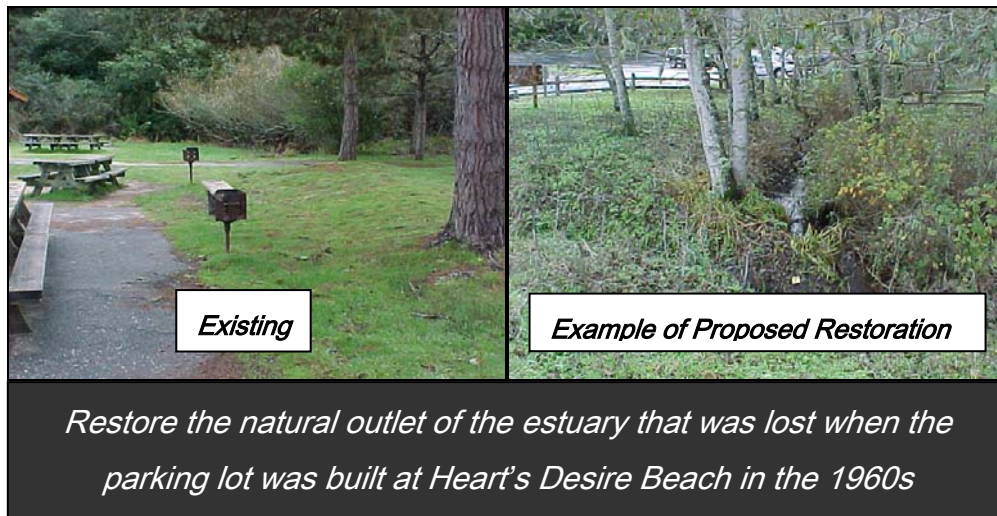
Continue to manage Heart’s Desire Beach as the only “drive-up” beach access in the park. Indian, Pebble, and Shell Beaches would continue to be minimally-developed “walk-in” beaches with natural estuarine ecosystems.

HD-3 Maintain Values and Interpretive Programs at Indian Beach

Preserve and enhance the Indian Beach estuary and protect its cultural attributes including the midden site. Limit visitor access to foot traffic on the existing trail and boat access. Maintain the remoteness and quiet of this area by restricting mechanized activities and development. Interpret the natural and cultural features of this site. Continue and enhance the current effective multi-use management of Indian Beach that blends the mutually-enhancing goals of estuary and archeological site preservation with low-impact beach recreation and overnight school group “Environmental Living Programs” (which teach the natural harmony of culture and nature through environmental awareness and care).

HD-4 Restore the Natural Outlet of the Heart’s Desire Beach Estuary

Restore the natural outlet of the estuary that was lost when the parking lot was built at Heart’s Desire Beach in the 1960s. The creek could be realigned away from the archeological site. Alder trees could be re-established to screen the parking lot from the beach and picnic facilities could be located under the shade of the alder trees.



HD-5 Formalize Cartop Watercraft Launch Area at Heart's Desire Beach
Possibilities include providing a drop-off area in the parking lot and creating a sand "drag" path to a watercraft launching area.

HD-6 Improve Picnic Areas
Picnic facilities should be redesigned and relocated to better blend with the natural environment and to provide a sense of seclusion where appropriate. The existing bluff picnic area could be redesigned to better accommodate large group picnics, individual site picnickers, and special event day uses. Redesigning the existing picnic facilities and pedestrian access to the restroom near the lower Heart's Desire Beach parking lot and beach will be necessary when the natural outflow of Heart's Desire Creek is reestablished across the beach.

HD-7 Adapt former Hike-Bike Campground to a Group Campground
This site could be easily adapted to function as a group campground (approximately 40 people), which would help address the local deficit of this kind of public camping experience in the West Marin area.

HD-8 Develop Small Drive-in Campground above the Entrance Station
The current park maintenance storage area (the "boneyard" site) may be considered for development of an approximately 15-site (maximum) walk-in campground provided, however, that accommodation may be made for vehicles to provide any necessary disability access. The campground could include a campground host site, and a small campfire center. The design and operation of this campground is intended for tent camping, with low impact uses that are compatible with the aesthetic qualities of the Heart's Desire Area. This campground would help address the local deficit of this kind of public camping experience in the West Marin area.

HD-9 Improve Office/Entrance Area
Some site changes (ADA ramp, bus parking) are now being designed to accommodate ADA access to the planned Miwok interpretive area inside the current Office building. To complete improvements to this area a kiosk could be constructed in the triangular traffic island seen as one first approaches the office area by vehicle. This kiosk would facilitate the collection of entrance fees and allow the staff to monitor those leaving to better track and manage the park capacity for parking and camping.

HD-10 Maintain Overnight Security in the Heart's Desire Area
The security gate on Pierce Point Road could be retained and closed at sunset (as it is done now) to discourage after-hours vandalism and beach parties.

HD-11 Maintain Current Housing and Maintenance Facilities
Continue staff housing at the current park dwellings, and maintenance functions at the current maintenance yard.

HD-12 Encourage Trail Connections with Point Reyes National Seashore

The Department will encourage the Point Reyes National Seashore to extend its trail system to meet the trails of Tomales Bay State Park in two locations in the Heart's Desire Area. The first possibility is a trail connection from Indian Beach to Point Reyes National Seashore's Marshall Beach Trail and perhaps eventually to the Tomales Point Trail. The second possibility is a trail connection from Tomales Bay State Park's Johnstone Trail (where it nears the Pierce Point Road) across Pierce Point Road and the current grazing lands of the Point Reyes National Seashore to connect with the Mount Vision Road and the Inverness Ridge Trail. Both of these trail connections would contribute to the completion of the California Coastal Trail in this area.

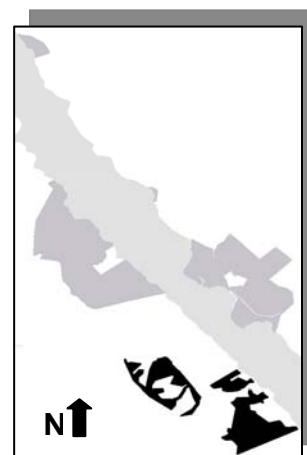
HD-13 Upgrade Heart's Desire Beach Restroom Waste Disposal System

The Heart's Desire Beach restroom waste disposal system should be upgraded to meet demands during peak use periods. Alternative methods shall be explored for waste disposal that affords adequate protection to stream habitat and maintains high water quality.

INVERNESS AREA

INVERNESS AREA MANAGEMENT VISION

Except for the North Dream Farm property, the Park's three discontinuous Inverness Area parcels will be managed for their natural values of watershed, wildlife habitat, viewshed, and low-impact day-use recreation. The North Dream Farm property will be enhanced by removal of obsolete trailers and could subsequently be developed as a day-use picnic and trailhead area (and perhaps also for staff housing if other sites prove unfeasible and site safety issues can be adequately addressed). Developing modest day-use facilities on the North Dream Farm property would allow visitors the opportunity to enjoy secluded picnicking in the alder forest next to the creek, to hike a nature trail, and even to continue up to Inverness Ridge. Visitors will continue to have the opportunity to hike the fire roads that extend up from the town of Inverness and intermittently cross State Park land to the crest of Inverness Ridge. From here, National Park Service trails lead along the ridge and down into the Point Reyes Seashore.



INVERNESS AREA GUIDELINES

INV-1 Preserve Current Natural Resource Values on Inverness Ridge

Leave the three Inverness parcels undeveloped (except for the North Dream Farm property) and continue managing these parcels as natural watershed, viewshed, and wildlife habitat.

INV-2 Enhance the North Dream Farm property

Enhance the North Dream Farm property by removing obsolete trailers and any structures found not to be historically significant after appropriate cultural survey work is done.

INV-3 Create Trail Opportunities at the North Dream Farm Property

Consider developing a day-use trailhead, a self-guided nature trail loop, and an extension of the nature trail which would connect with the ridgetop trails of Point Reyes National Seashore. The nature trail could follow the old road alignment along the northern side of the valley until the private lands to the south are passed. At this point the ridgetop trail extension could switchback up the southern side of the ridge until it can join the existing trail that leads to the Inverness Ridge. This trail extension would require a short easement through a section of the Nature Conservancy lands (or perhaps a land exchange or transfer).



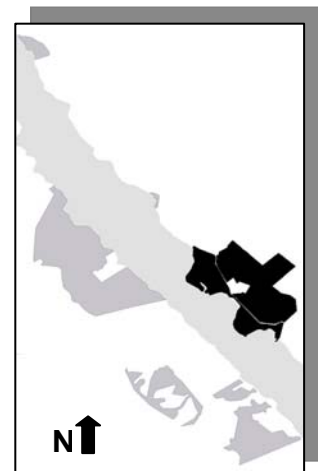
INV-4 Consolidate Inverness Ridge Public Land Uses

Consider acquisitions from willing sellers, land exchanges, or land-use agreements to consolidate the park's three discontinuous Inverness Area parcels and make them more usable for public hiking both on the Tomales Bay side and to connect with trails in the Point Reyes National Seashore. Discussions with The Nature Conservancy, the National Park Service, and the Inverness Public Utility District would consider the best way of managing these contiguous land holdings in the Inverness Ridge area for the highest public good. Options for more effectively meeting common needs for watershed, wildlife, habitat, fire management, and recreation could be discussed. Options could include investigating the benefits of land transfers, operating agreements, easements, and Memoranda of Understandings (MOUs).

MILLERTON AREA

MILLERTON AREA MANAGEMENT VISION

The Millerton Area, which includes Millerton Point, Tomasini Point, and the Millerton Uplands, will be managed primarily for the natural values of watershed, wildlife habitat, viewshed and for low-impact day-use recreation. Recent acquisitions in the Millerton Uplands are currently not open to public use. Recreational facility development will be limited to the existing parking and day-use areas near Highway 1 and potential parking and day-use trailheads in the Millerton Uplands and at Tomasini Point.



People driving or bicycling on Highway 1 and visitors coming to the Millerton Area to picnic, study nature, or hike will find inspiring interpretive information, adequate parking, and sanitary restroom facilities. Visitors should have the opportunity to hike on a new trail through the Millerton Uplands between the Millerton Loop Trail and the Tomasini Point Trail, if an appropriate method can be found to cross the canyon in the Millerton uplands. Bicyclists, who currently have no access to trails in Tomales Bay State Park, will be able to use segments of the Millerton Uplands Trail.

MILLERTON AREA GUIDELINES

MIL-1 Restore Natural Values at Tomasini Point

Preserve and protect the Tomasini Point estuary area as habitat for native plants and animals. Facilitate volunteer programs to assist with research, restoration and monitoring projects. After studying the sensitivities and dynamics of the Tomasini Point area and its estuary, realign the trail, provide interpretation along the trail, and manage the estuary according to research results and preservation goals.

MIL-2 Create a Millerton Uplands Trail

A new trail could be built in the Millerton Uplands. If an appropriate method can be found to cross the canyon in the Millerton Uplands, this trail could connect the two non-designated east shore park trails, the Millerton Point loop trail and the Tomasini Point trail. This proposed trail could be designed to accommodate mountain biking where appropriate. Mountain bikes should be limited to the east side of Highway 1 and not be permitted in the more sensitive Millerton and Tomasini Point areas. Some of the more level parts of this trail could also be designed to accommodate wheelchairs. The resulting trail system of the Millerton Uplands Trail and the Millerton and Tomasini Point trails would provide a number of trail possibilities for day-users to enjoy. This trail system could be interpreted. The Millerton Uplands trail would also complete a new segment of the California Coastal Trail.



MIL-3 Provide Parking, Restroom Improvements, and Trailheads

Two trailheads could be established to support the proposed Millerton Uplands trail—a southern trailhead near Millerton Point and a northern trailhead at Tomasini Point. Ideally, the existing trailhead sites could be used with modification. If safe access to the east side of Highway 1 is not feasible from the current Millerton Point parking lot then a new modest-sized and sensitively located and screened parking lot and restroom facilities could be built on the east side of the highway near the entrance to Sheep Ranch Road. The existing pit toilet at the Millerton parking area should be replaced with a larger capacity flush toilet restroom that can be connected to the existing leach field south of the residence area.

Parking for the northern end of the Millerton Uplands trail could be near the current Tomasini Point trailhead. The current small roadside pullout here is insufficient for supporting both the Tomasini Point Trail and the proposed Millerton Uplands trail. A new modest-sized and sensitively located and screened parking lot with restroom facilities could be built here. Further analysis and consultation with Caltrans is needed to determine the feasibility of a crosswalk at this location or other means of providing access from the parking lot to the Millerton Uplands trail.

MARCONI COVE AREA

MARCONI COVE AREA MANAGEMENT VISION

Of all the properties in the park, Marconi Cove is the most suited for new recreational development, as this former marina is already highly modified, has excellent bay access and views, and is right on Highway 1. The site is largely bay fill with a rip-rapped shoreline. This property was recently purchased by State Parks to develop for its bayside recreation potential.

Marconi Cove should be developed as the Park's primary recreational east shore bay access. The broad natural vistas of the bay offer the highly valued experience of being at the edge of a spectacular marine bay formed by an active earthquake fault, full of sea and bird life, traversed by recreational and commercial boats, and moved by tides and weather.

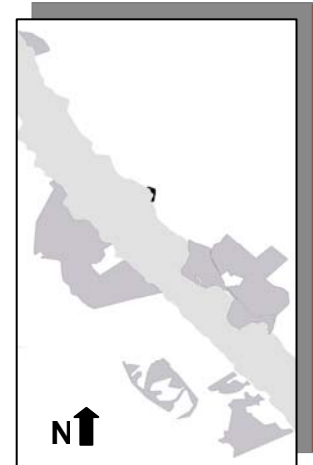
Enhancing the previously heavily-impacted Marconi Cove Area, developing it for recreational uses, and adding native landscaping will create an attractive and useful area for both local residents and non-local visitors. Day-use travelers on Highway 1 and local residents will be able to enjoy bayside viewing, bird watching, picnicking, camping, or boating and have adequate parking, inspiring interpretive information, and restroom facilities. Visitors will have easy vehicle and bicycle access to stop and gain immediate access to the bay, which is a rare opportunity on public lands fronting Tomales Bay, particularly on the east shore.

Visitors will be able to launch watercraft. A small campground could serve bicyclists who travel on Highway 1 and boaters who want to spend the night near their parked boat before or after their boating experience on the bay.

MARCONI COVE GUIDELINES

MC-1 Day-use Recreation at Marconi Cove

Provide day-use picnicking and boating facilities at this former marina/campground site. Day-use facilities could include parking, restroom facilities, a small orientation and interpretive area, picnic tables, a possible concession for kayak rentals and snacks,



boat trailer parking, a boat launching ramp, and a windsurfing and cartop watercraft launching area.

MC-2 Camping at Marconi Cove

Provide approximately eight walk-in campsites which could accommodate, but would not be limited to, the camping needs of bicyclists, boaters, and future hikers of the California Coastal Trail. A campground host area could be provided.



Provide approximately eight walk-in campsites to accommodate the camping needs of bicyclists, boaters, and future hikers of the California Coastal Trail

MC-3 Use of Existing Structure

The bathhouse (potentially historic) along Highway 1 could be adapted as staff or campground host housing or for another park use. The old gas station is less than 50 years old, does not have the potential for historic significance, and can be demolished.

MC-4 Nature Area

Retain natural values where the property is narrowest, on the south end.

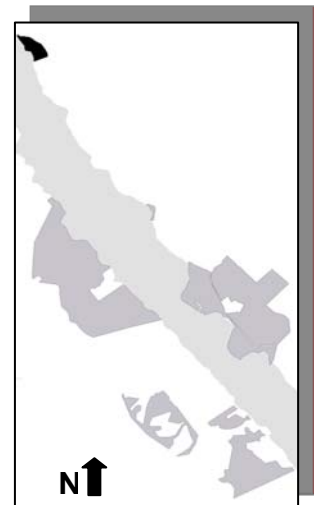
MC-5 Design Recreational Facilities to Maintain High Water Quality and Shellfish Aquaculture

State Parks shall coordinate with the Department of Fish and Game and the Department of Health Services to ensure that development and operation of recreational facilities at Marconi Cove consider potential impacts to freshwater and baywater quality, wildlife, and to existing state water bottom leases utilized for commercial shellfish aquaculture.

NORTH MARSHALL AREA

NORTH MARSHALL AREA MANAGEMENT VISION

This property should be managed primarily to preserve its natural habitat, watershed, and open space recreation values such as scenic driving along Highway 1, hiking, and nature observation. Physical and environmental constraints currently limit public access and use of this park land. Given these constraints, the general plan is not proposing any public recreational development for this property.



NORTH MARSHALL AREA GUIDELINES

NM-1 Manage for Natural and Open Space Values

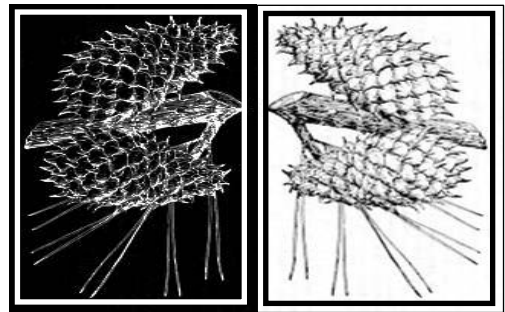
Preserve the natural resources and open space character of this property and consider future potential for low-intensity public access and use. Motorists and cyclists traveling along Highway 1 will continue to enjoy the natural vistas of Tomales Bay across the open space of this property. If access and environmental requirements can be satisfied, day-use facilities such as a trail may be considered in the future. The plan supports future consideration of use of this property as a connecting segment of the California Coastal Trail, should that trail be routed to the west of Highway 1 in this area.

NM-2 Consider Jurisdiction or Management Alternatives

Since this property is remote from the park's other holdings and has limited recreational potential, there may be environmental and operational benefits to considering land exchanges, memoranda of understandings, or other arrangements with interested organizational stakeholders to achieve common goals of protecting and managing the natural resources and open space of this area.



VISITOR CARRYING CAPACITY



VISITOR CARRYING CAPACITY: THE SUSTAINABILITY OF NATURAL, CULTURAL, AND RECREATIONAL RESOURCES AND VISITOR EXPERIENCES

The Department's dual mission of preserving existing park resources and providing high-quality recreational experiences within the same area is a major aspect of park land use planning. The Department has found that providing appropriate public recreation and education in areas of important park cultural and natural resources encourages public support for preservation and enhancement of those resources. The park's natural and cultural resources are key reasons for visiting a park and impairment of these resources is also impairment of recreation opportunities. This mutually-supportive relationship is recognized and supported throughout the general plan and becomes especially important during consideration of visitor "carrying capacity" in the park.

There are often limits imposed by law on the capacity of a building to accommodate visitors, but no laws exist to define the same visitor carrying capacity for natural and outdoor recreation areas. Public Resources Code Section 5019.5 states that "Before any park or recreational area developmental plan is made, the department shall cause to be made a land carrying capacity survey of the proposed park or recreation area, including in such survey such factors as soil, moisture, and natural cover." Public Resources Code Sections 5001.96 states that "Attendance at state park system units shall be held within limits established by carrying capacity determined in accordance with Section 5019.5." However, the Code does not further define "carrying capacity".

For the purposes of this plan, the term "carrying capacity" denotes a level of visitor use that is sustainable and does not cause substantial degradation to the natural, cultural, or recreational resources or to positive visitor experiences. These conditions have been broadly defined by the general plan and will be further defined by processes that will take place after the plan is complete.

The intent of a general plan process is to look at all existing park issues, values, and uses and to propose ways to solve problems and preserve and enhance the natural and cultural resources and the quality of the visitor experience. This general plan is also an environmental document that is a first opportunity to look at potential environmental impacts resulting from improvement proposals. But a general plan does not define specific environmental impacts for specific projects because specific projects are not proposed in a general plan. A general plan initiates a series of processes for determining specific visitor carrying capacity in park areas. Future planning processes and park development projects will further identify and refine desired conditions in terms of limits of acceptable changes to resources and to visitor experiences in the park.

GENERAL PLAN AND POST-GENERAL PLAN PROCESSES

During the Tomales Bay State Park General Plan process, the planning team established plan proposals and guidelines through a decision-making process that

relied on resource information and studies, public input, park management standards, and professional judgment. Relevant information gathered for this process included legislative and Department policy guidance; analysis of regional recreational opportunities; existing quality standards for park natural and cultural resources; potential mitigations for impacts on sensitive resources from plan proposals; significance of park visitation issues and concerns; the current type, amount and design of park facilities and infrastructure; and public opinion on issues.

After gathering sufficient information and surveying public needs, desires, and concerns through a public meeting that solicited input, the planning team developed and considered a range of possible enhancements to the park's natural, cultural, and recreational resources, programs, and facilities. These possibilities were shared with interested stakeholders and the planning team subsequently developed a set of preferred proposals to present to stakeholders.

There are many safeguards, considerations, and points of decision during and after the general plan process that work to promote the sustainability and compatibility of resource protection and recreational use levels. During the planning process, the planning team carefully considered and adjusted the type, scale, location, size, and timing of recreational facilities and activities to avoid or minimize impacts on sensitive resources or positive visitor experiences. Many potential recreational enhancement possibilities were dismissed by the planning team as having too many resource impacts or potential visitor conflicts before any "Planning Possibilities" were shared with the public for their comment. In some cases there were decades of recreational history at a site which informed the team of the likelihood that a particular recreation proposal would or would not be sustainable at that site. One of the major "checks" on the maximum level of visitor use of an area is the recommended size of parking lots and the general capacities of other recreational facilities.

During the planning and implementation of facilities there may be further resource and visitor use studies, CEQA documentation, public review, and often permitting by regulatory agencies which all act to promote sustainable design and appropriate public use levels of a new facility. Future management studies and plans will provide more information that will allow park managers to quantify resource standards and construct facilities or introduce resource management programs to achieve "desired conditions."

DETERMINATION OF CARRYING CAPACITY

There are generally three major components that contribute to the determination of a natural or outdoor recreation area's "carrying capacity":

1. The ecological or physical capacities of the natural and cultural resources to accommodate visitor use without unacceptable damage to those resources.
2. The sociological component, or the ability of visitors to enjoy park recreational, cultural and natural resources without undesirable interactions (such as crowding) from other park visitors.

3. The ability of the Department to manage resources and visitors to mitigate unwanted impacts to the resources or to visitor experiences at the park.

A general plan for a state park provides broad management direction at a “goals and guidelines” level. Therefore, objectives for carrying capacity are written in the general plan as narrative statements that define desired future resource and visitor experience conditions in a qualitative manner. The specifics of the three components listed above will be determined in post-general plan phases for future implementation of specific park projects.

In the *Existing Land Use* section of the general plan, there are narrative descriptions of existing visitor experiences and resource values used by the planning team in addition to input from other sources to develop the park Vision Statement. The Vision Statement for Tomales Bay State Park emphasizes public use and resource preservation as mutually respected values. In *The Plan* section of the general plan, there are further qualitative descriptions in the forms of goals and guidelines for the establishment of desired visitor experiences and resource conditions to achieve and support the Vision for the park.

THE ADAPTIVE MANAGEMENT PROCESS

The General Plan has provided a *Vision Statement* and various *Goals and Guidelines* that describe desired resource conditions and visitor experiences for the park. Future park managers and designers will implement the vision through the goals and guidelines of the General Plan. The Department needs a process to ensure that the General Plan’s *Goals* are met and that prevents the degradation of park resources and visitor experiences.

Since the park’s natural, cultural, educational, and recreational resources and experiences are part of nature’s and culture’s flux of continual change, State Parks uses an adaptive management process to maintain the values it is mandated to protect. We can think of this management process as a kind of feedback system, similar to a thermostat that regulates a building’s temperature within an acceptable range. Like a thermostat, the Adaptive Management Process depends on setting limits (called Management Standards), recognizing when the Standards are being exceeded (Management Indicators), and corrective action (Management Actions).

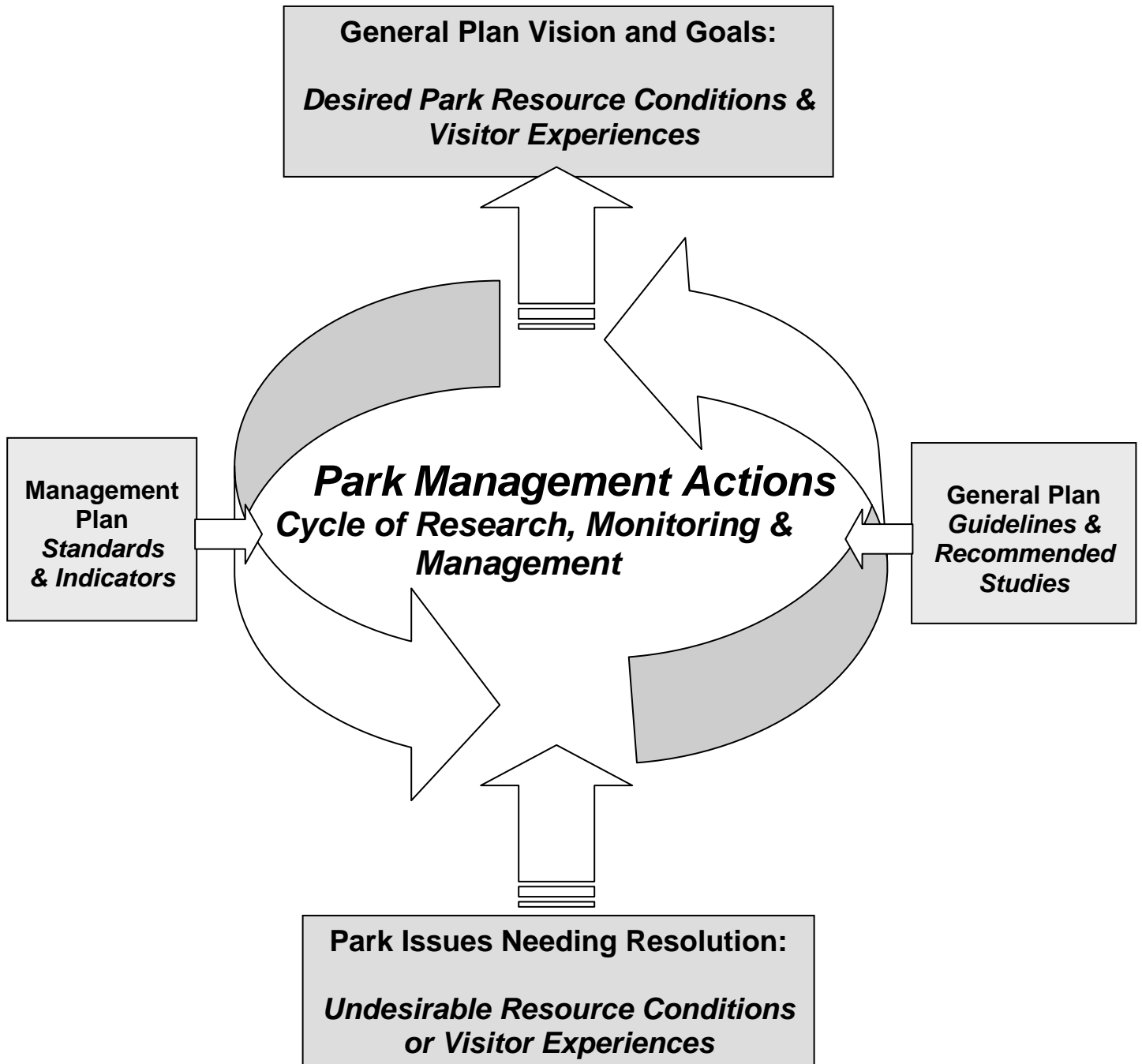
Adaptive management is a cyclical process that specifies on-going research, monitoring, and management to manifest the vision and goals of the Tomales Bay State Park General Plan and to prevent the degradation of park resources and visitor experiences due to overuse or changing ecological or demographic conditions.

The following describes this Adaptive Management Process. Two graphics are presented to illustrate how the Adaptive Management Process works. The first is a schematic diagram and the second is a matrix.

As the schematic diagram shows, adaptive management begins with the definition of the park issues needing resolution (shown at the bottom of the page). The General Plan Vision and Goals (shown at the top) define the desired park resource conditions and visitor experiences. The Park Management Actions (shown at the center) achieve these goals through on-going park research, monitoring, and management. Park Management Actions are directed by the General Plan's Guidelines and Study Recommendations. These future studies and Management Plans will determine the *standards* and *indicators* used to monitor and preserve the quality of park resources and experiences.

The Adaptive Management Process

General Plan Vision, Goals, and Guidelines direct the *Park Research and Management Cycle* that identifies *Resource and Experience Standards and Indicators*, monitors conditions, and takes corrective action to meet the goal



The following matrix shows the details of the adaptive management process using example issues from this general plan. It shows three *Issues* addressed during the general plan process for Tomales Bay State Park and includes future desired conditions (*Goals*) recommended in the plan for each issue. It also shows the relevant *General Plan Guidelines and Recommended Studies*. The matrix shows the type of measurable standards to be developed after general plan approval that will identify the limits of acceptable change to resources or visitor experiences and it also identifies examples of warning indicators that would alert staff when and if these sustainable levels of use (the standards) are being exceeded. Finally, the matrix provides examples of management actions that could be taken to help resources recover from visitor use impacts or that would help restore desired visitor experiences that may be threatened. These actions will help reestablish the plan's "desired conditions" and the vision for the park. **The following is a "walk-through" of the matrix:**

Step 1. General Plan Issues: Undesirable Park Resource Conditions and Visitor Experiences

The General Plan Team analyzed important issues and developed recommendations for improving resource conditions and visitor experiences at the park (resulting in the General Plan *Goals*).

Step 2. General Plan Goals: Desired Park Resource Conditions and Visitor Experiences

These are general qualities envisioned for the park as outlined in the *Vision Statement* and the *Goals and Guidelines* in the General Plan.

Step 3. General Plan Guidelines

The General Plan proposed guidelines to *generally* direct the future park research, monitoring, and management actions.

Step 4. Recommended Studies

The General Plan recommends studies, surveys, and *Management Plans* that will specify resource and visitor experience *Monitoring Standards* and *Monitoring Indicators*.

Step 5. Completion of Management Studies

The completion of the studies recommended in this General Plan will establish the *Monitoring Standards and Indicators* shown in Steps 5a. and 5b.

Step 5a. Typical Monitoring Standards

These are *examples* of standards to be developed after the General Plan is approved and studies and Management Plans are completed. The qualitative vision statements expressed in the General Plan will be expressed as quantitative or measurable *Standards*.

Step 5b. Typical Monitoring Indicators

Park resources and visitor experiences will be monitored over time to see if the identified *Standards* are being met. This column shows examples of warning signs that would indicate the *Standards* and park *Goals* are not being realized.

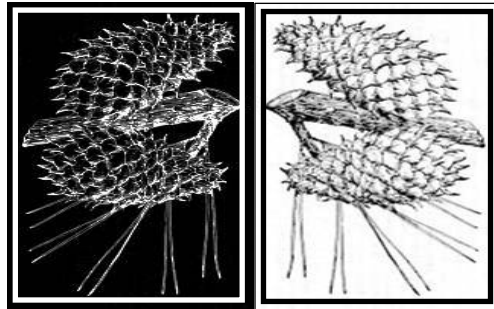
Step 6. Typical Management Actions

These are typical actions that could be taken by park managers to help guide the park's resources or visitor experiences toward conditions expressed in the General Plan's *Vision Statement* and *Goals and Guidelines* and in the *Standards*.

The Adaptive Management Process (illustrated with three example issues)
How the General Plan Goals will be Realized and Resources Protected at Tomales Bay State Park

General Plan Phase				Future Park Research, Monitoring and Management Actions		
1. General Plan Issues (Three Examples)	2. General Plan Goals	3. General Plan Guidelines	4. Recommended Studies	5. Completion of Management Studies		6. Typical Management Actions
				5a. Typical Monitoring Standards	5b. Typical Monitoring Indicators	
Water Quality and Erosion The Regional Water Quality Control Board has designated Tomales Bay as an impaired watershed	The park's lands, facilities, and activities do not degrade the water quality of Tomales Bay	WAT-8: State Parks should participate in the collection of water quality data in the park	Develop a Park Watershed Management Plan	Water samples in the park should not exceed fecal <i>coliform</i> counts of ____	Water sampling in park creeks indicates <i>coliform</i> counts are approaching standard limits	Identify and reduce source of pollution to meet standards
Archeological Midden Preservation The park's midden sites are a valuable cultural and educational resource that are vulnerable to erosion and recreational impacts	Protected, preserved, and stabilized archeological sites and historic resources at the park	CUL-2: Protect important cultural resources from adverse effects resulting from park uses and natural processes, such as erosion	Develop a Park Cultural Resources Management Plan	Erosion occurring at the park's midden sites should not exceed ____ millimeters per year	Monitoring of the park's midden sites indicates erosion is approaching standard limits	Identify and reduce source of erosion to meet standards
Cartop Watercraft Launch Opportunities Park opportunities for launching cartop watercraft and windsurfing craft is limited	New cartop watercraft and windsurfer launching opportunities are provided in the park	HD-5: Formalize cartop watercraft launch area at Heart's Desire Beach. MC-1: Provide windsurfing and cartop watercraft launch areas at Marconi Cove	None recommended	The maximum number of cartop boats to launch at Heart's Desire Beach within any 4-hour period should be ____ to retain the availability and quality of the beach user experience	Visitor use monitoring indicates that the number of cartop boats launching at Heart's Desire Beach within many 4-hour periods is approaching standard limits and is degrading the availability or quality of the beach user experience	The ranger monitors and limits the number of cartop boat launching visitors at the Heart's Desire kiosk entrance

ENVIRONMENTAL ANALYSIS



SUMMARY

The objectives of the Environmental Analysis section are to identify the significant impacts of implementing the General Plan and to provide general mitigation measures for a first tier of environmental review. The General Plan does not provide a detailed program of specific development or management, but sets the broader goals for the park's management, resource protection, and provisions for public use. Future planning steps may include layout and design of facilities or specific resource management plans and processes. A more detailed level of environmental analysis is applied at that time.

Planning areas have been identified which will guide park-wide land use decisions and visitor use areas. This Environmental Analysis focuses on the environmental effects of the preferred planning alternative for five separate park planning areas: Heart's Desire Area, Inverness Area, Millerton Area, Marconi Cove Area, and North Marshall Area. The environmental effects of specific future projects in these planning areas will be evaluated further in separate project-specific environmental documents when details of future development projects are considered.

The proposals contained in this document were developed during the general planning process for Tomales Bay State Park. The General Plan proposals, also referred to as the plan, respond to critical issues in park facilities and management and provide guidelines for future park land use decisions. The plan outlines specific goals and guidelines, recommends facility development, and identifies the need for specific resource management plans.

For the Heart's Desire Area, the plan proposes a redesign of the blufftop picnic area to accommodate both individuals and groups in a more efficient and aesthetically-pleasing manner; to restore the natural stream outlet at Heart's Desire Beach while improving the recreation experience by screening the parking lot from the beach and redesigning the picnic and boat drop-off areas; providing a small, low-impact drive-in campground at the current maintenance storage yard near the area entrance; converting the former "hike/bike" campground to a group campground, allowing camping opportunities for visitors in organized groups; improving the park entrance area; encouraging trail connections with the Point Reyes National Seashore; and improving regeneration of the Bishop pine forest.

In the Inverness Area, the plan proposes improvement of the park property at North Dream Farm Road off Sir Francis Drake Boulevard by removal of existing non-historic structures, and to add a small day use parking area, a picnic area, and a trailhead for public access to a proposed nature trail and a trail leading up the Inverness Ridge to connect with Point Reyes National Seashore trails.

Proposals for the Millerton Point Area include improving restroom and picnic facilities at Millerton Point; creating public access to the Millerton Uplands via a new trail, providing a connection from this trail, if possible, to a redesigned Tomasini Point trail; and improving trailhead parking and providing restrooms at Tomasini Point. The plan recommends enhancement of the management of Tomasini Point's estuary, and

identifies an additional potential staff housing site at the existing Millerton Point staff housing area.

In the Marconi Cove Area, the plan proposes providing a small campground, a picnic area, launching opportunities for watercraft, and proposals for visitor interpretation and watercraft/campground concessions.

Recommendations for the North Marshall Area include maintaining this property in its undeveloped natural state unless access and environmental issues can be satisfied; if so, low-impact day use facilities such as a trail may be considered. There may be environmental and operational benefits to considering land exchanges, memoranda of understandings, or other arrangements with the National Park Service, the Audubon Canyon Ranch, or other organizational stakeholders which might improve and/or maintain the protection and management of the natural resources and open space character of this property.

Park operations proposals include ensuring that operational and maintenance budgets keep pace with facilities development in the park. The plan also recommends maintaining and improving as necessary the existing park staff housing in the Heart's Desire and Millerton Areas. Due to the expensive local housing market and the lack of park maintenance facilities on the east side of the bay, additional staff housing and maintenance facilities should be considered at the nearby Marconi Conference Center State Historic Park.

Comprehensive management plans for natural and cultural resources, roads and trails, visitor safety, and watershed management are also proposed.

Potential significant environmental impacts are those commonly associated with facility development and visitor use. Potential adverse impacts identified in this plan include disturbance to or loss of natural and cultural resources, degradation of water quality due to excessive soil erosion and sedimentation, and impacts to visual and aesthetic resources. Potential mitigation measures for each type of impact have been discussed. These mitigation measures reflect the specificity of the General Plan and are therefore in the form of guidelines. The most appropriate mitigation measures will be developed as specific projects are proposed and implemented.

DESCRIPTION

This General Plan for Tomales Bay State Park, with all its sections, constitutes an environmental impact report (EIR), as required by Public Resources Code Sections 5002.2 and 21000 et seq. It will be submitted to the California Park and Recreation Commission (Commission) for approval. The Commission has sole authority for the plan's approval and adoption. Following approval by the Commission, the Department

will prepare management plans and area development plans as staff and funding become available. Future projects, based on the proposals in this General Plan, may be subject to permitting requirements and approval by other agencies, such as the

Department of Fish and Game.

The Notice of Preparation for this General Plan was circulated to the appropriate federal, state, and local planning agencies on June 13, 2003. Written comments were received from the National Park Service, the Golden Gate National Recreation Area, Caltrans, and the Marin County Fire Department.

The tiering process of environmental review is incorporated into this EIR. Tiering in an EIR prepared as part of a general plan allows agencies to consider broad environmental issues at the general planning stage, followed by more detailed examination of actual development projects in subsequent environmental documents. These later documents incorporate, by reference, the general discussions from the broader EIR in the General Plan and concentrate solely on the issues specific to the later projects [Public Resources Code Section 21093; California Environmental Quality Act (CEQA) Guidelines Section 15152]. This document represents the first tier of environmental review.

As a first tier of planning, this plan provides park-wide goals and guidelines for interpretation, cultural and natural resource management, visitor access and circulation, recreation activities and facilities, visitor experiences, services and visitor safety; trails, concessions, wildfire, aesthetics, sustainable design, operations, community and interagency relations, and acquisition. Future second tier review will provide more detailed information and environmental analysis. At each planning level the plan will be subject to further environmental review to determine if it is consistent with the General Plan and to identify any significant environmental impacts and mitigation measures that may be specific to the project.

Mitigation generally requires resource specialists to evaluate the scope of work, identify the cause of the impacts, and specify measures to avoid or reduce the impacts to a less than significant level. More comprehensive environmental review will be possible at those levels of planning, where facility size, location, and capacity can be explicitly delineated, rather than at the general plan level. Additional potentially significant environmental impacts and mitigation measures specific to the project will be identified at this time.

The Plan Proposals section of this General Plan represents the project description and establishes the overall long-range purpose and vision for Tomales Bay State Park. Specific goals and supporting guidelines are designed to address the currently identified critical issues, while developing strategies for resource protection, preservation, rehabilitation, resource interpretation, visitor experiences, visitor carrying capacity, and facility development at the park.

The plan proposes the identification of five distinct planning areas to guide land use decisions, facility development, and visitor use. The plan also outlines a number of park-wide proposals, including the development of comprehensive resource management plans, a roads and trails management plan, and watershed management plan. In the following summary of park area proposals, some are followed with a letter/number

symbol that matches a more detailed description of the proposal in the “Park Area Management Visions and Guidelines” section in the General Plan. For a complete listing of all plan goals and guidelines, see the Plan Proposals Section of the General Plan.

PREFERRED ALTERNATIVE: SUMMARY OF PROPOSALS BY PLANNING AREA

If the General Plan were fully implemented as written, the following Area-specific proposals would be carried out:

HEART’S DESIRE AREA

- Improve regeneration and preservation of the aging stands of the park’s Bishop pines, particularly at Jepson Memorial Grove (see Guideline HD-1)
- Continue to manage Heart’s Desire Beach as the only “drive-up” beach access in the park (see Guideline HD-2)
- Preserve and enhance the Indian Beach estuary and midden site; continue and enhance low-impact beach recreation and overnight school group interpretive programs (see Guideline HD-3)
- Restore the natural outlet of the estuary that was lost when the parking lot was built in the 1960s. Redesign fully-accessible picnic facilities under the shade of re-established alder trees (see Guideline HD-4)
- Formalize cartop watercraft unloading and launching areas at Heart’s Desire Beach (see Guideline HD-5)
- Redesign the Vista Point picnic area to better accommodate group picnics and special events as well as individual picnic sites, and to improve aesthetics. Redesign the existing picnic facilities at Heart’s Desire Beach after the natural outflow of Heart’s Desire Creek is reestablished (see Guideline HD-6)
- Develop a group camping facility at the former “hike/bike” campground (see Guideline HD-7)
- Develop a 15-unit maximum campground at the current maintenance storage area, with accommodations for tents and small vehicles (see Guideline HD-8)
- Improve office/museum/entrance/fee collection area by adding a kiosk to assist in fee collection and monitoring of visitation (see Guideline HD-9)
- Maintain overnight security by utilizing the existing gate on Pierce Point Road (see Guideline HD-10)

- Continue staff housing at the current park dwellings, and maintenance functions in the current maintenance yard (see Guideline HD-11)
- Enhance trail connections to the trails of Point Reyes National Seashore (see Guideline HD-12)

INVERNESS AREA

- Preserve current watershed, viewshed, and wildlife habitat values (see Guideline I-1)
- Improve the North Dream Farm Road property by removing structures that have no potential for significance (see Guideline I-2)
- Construct a day use picnic area with interpretive panels and restroom (see Guideline I-3)
- Develop a trailhead, a nature trail and a trail connection to the ridgetop trails of Point Reyes National Seashore (see Guideline I-4)
- Coordinate with private landowners and federal, state, and local agencies with jurisdiction over nearby lands. Encourage inter-agency consolidation and/or joint management of Inverness Area parcels (see Guideline I-5)

MILLERTON AREA

- Identify, protect, and interpret important natural resources at Tomasini Point and restore disturbed sites where feasible. Realign the trail after study of area sensitivities and dynamics (see Guideline M-1)
- At the current Millerton Point parking lot, provide a trailhead with educational panels, and connection to a hike and bike trail in the Millerton Uplands (see Guideline M-2)
- At the current Millerton Point parking lot, improve restroom and picnic facilities. At the Tomasini Point trailhead, improve parking and trailhead and provide restroom facilities. Coordinate with Caltrans to provide safe highway crossings for visitors to access trails from both Millerton and Tomasini Points (see Guideline M-3)

MARCONI COVE AREA

- Provide day-use area with parking, restroom, educational panels, picnic facilities, possible watercraft and snack concessions, boat trailer parking, and launching areas for car-top watercraft and trailered boats (see Guideline MC-1)
- Provide a small campground with approximately eight walk-in sites. Provide campground host site if needed (see Guideline MC-2)

- Demolish the remains of the small gas station if necessary. Adapt the existing potentially historic bathhouse for park use if desired (see Guideline MC-3)
- A natural area at the southern end of the property should be left in an undeveloped state (see Guideline MC-4)

NORTH MARSHALL AREA

- Leave in a natural, undeveloped condition to preserve natural values and open space qualities; or, if access and environmental issues can be satisfied, provide low-impact day use facilities such as a trail (see Guideline NM-1)
- Due to its limited recreation potential, consider trade or sale of the property to an agency or organization that will preserve and protect the property's natural resources and undeveloped open space character (see Guideline NM-2)

PREFERRED ALTERNATIVE: PARK-WIDE PROPOSALS

- Develop **resource management plans** to evaluate the park's natural, cultural, and aesthetic resources and visitor experiences, to provide guidance for protection and restoration of resources, positive aesthetic qualities and visitor experiences, and to provide guidance for development of appropriate adaptive management processes. Establish **standards** for resources, aesthetic qualities and visitor experiences; establish resource, aesthetic quality, and visitor experience **indicators** to warn of impending unacceptable impacts; and develop **management actions** to minimize these impacts. (See Studies, Surveys, and Plans recommended in the General Plan's Plan Proposals section and the Visitor Carrying Capacity section).
- Develop a Watershed Management Plan for the park to define current conditions, identify data gaps, and to determine where mitigation is needed. Rehabilitate stream and upland areas to restore natural drainage patterns and geomorphic stability (see Guideline WAT-3); evaluate new projects and increased visitor use within the park to ensure they do not degrade surface and groundwater quality (see Guideline WAT-7); cooperate with other agencies to improve the health of Tomales Bay (see Guideline WAT-10).
- Protect sensitive plant communities from future development and visitor impacts (see Guideline VEG-1) and eradicate or control invasive exotic species in the park, with a priority given to areas of sensitive plant populations (see Guideline VEG-4). Work with appropriate agencies to restore the role of fire in the natural ecological processes of the park (see Guideline VEG-8). Develop a Vegetation Management Plan that helps guide managers in restoring and maintaining floral biodiversity and ecological processes.
- Manage park environments to protect and perpetuate ecosystems and their associated wildlife (see Guideline WIL-1). Maintain and enhance northern spotted owl habitat within the park (see Guideline WIL-6), and maintain working relationships with

neighbors to identify and preserve habitat linkages (see Guideline WIL-15). Develop a Wildlife Management Plan to provide for long-term management of the park's wildlife populations and habitats.

- Protect important cultural resources from adverse effects resulting from park use, development, programs, or natural processes such as erosion (see Guideline CUL-2); maintain cooperative relationships with groups who have traditional ties to resources within the park (see Guideline CUL-3). Develop a Cultural Resources Management Plan that establishes an ongoing management process to record and develop findings of significance and treatments for cultural resources in the park that are historically or archeologically important.
- Interpret the cultural, natural, scenic, and recreational resources, features, and values associated with Tomales Bay State Park to increase visitor understanding and enjoyment of the resources of the park (see Guideline INT-1).
- Establish a pattern of circulation and visitor access, to include integrated and efficient multi-modal transportation, that allows for clear choices for visitor arrival, departure, and travel throughout the park; explore with regional transportation agencies the possibility of instituting an integrated transit service that would link and provide connections with key activity centers within west Marin County (see Guideline ACC-8). Pursue shared parking arrangements with Point Reyes National Seashore and Marin County (see Guideline ACC-9). Evaluate and recommend appropriate modifications to signage associated with park visitation, to include signs on highways and other public roads leading to or within the park, and on trails, for interpretation, and in and around facilities (see Guideline ACC-12).
- Develop a Roads and Trails Management Plan that will evaluate the park's entire road and trail system and guide the placement, relocation, management, or removal of roads and trails located within the park. Provide appropriate trails for public access within the park and to adjacent regional and statewide trail systems.
- Provide a variety of recreational opportunities for California's diverse population; plan recreational opportunities within a regional context (see Guideline REC-1); enhance the recreational use of watercraft on Tomales Bay (see Guideline REC-4); evaluate visitor demand for new types of recreational facilities (see Guideline REC-5).
- Develop a plan that recommends potential concession opportunities for the park (see Guideline CON-1).
- Use interpretive media to educate visitors about natural hazards and how to avoid danger (see Guideline SAF-1); have professional geological evaluations, site investigations, and soil testing for major development projects to determine the appropriate facility location and design (see Guideline SAF-2).
- Coordinate with appropriate fire suppression agencies, such as the California Department of Forestry and Fire Protection (CDF), the National Park Service, and

county and community volunteer fire departments (see Guideline FIR-1). Develop a Wildfire Management Plan that will specify emergency actions for the protection of public safety, park structures, and adjacent landowner structures, and address Prescribed Fire Management Programs for the park to achieve ecosystem and cultural landscape management goals.

- Identify the distinctive aesthetic qualities that help give Tomales Bay State Park its unique “spirit of place” (see Guideline AES-1); integrate the park’s defined positive aesthetic values and spirit of place into the design of park facilities and programs (see Guideline AES-3).
- Where possible, incorporate sustainable design and materials in park projects; use natural, renewable, indigenous, and recyclable materials, and simple-to-maintain and energy-efficient design (see Guideline SUS-1).
- Provide needed and appropriate services and facilities for park security and administration, resource protection, visitor access, services, and health and safety, and maintenance and staff housing (see Park Operational and Staff Housing Goal).
- Maintain and enhance positive relations and communications between State Parks and neighboring communities and landowners towards meeting common goals, including security, safety, aesthetic and resource protection, and recreational opportunity (see Community Relations Goal).
- Enhance interagency coordination concerning the regional planning and management of ecological, biological, recreational, cultural, and educational resources (see Regional Planning Goal).
- Consider acquiring any land available from willing sellers for addition to the park that would expand opportunities for recreational facilities and activities, enhance resource management, or could increase operational efficiencies (see Guideline ACQ-1).

The proposed General Plan attempts to address the challenges and constraints created by the existing uses, facilities, and visitor demands. The plan provides direction, criteria, goals, and objectives for future development, operation and management.

ENVIRONMENTAL SETTING

Refer to the Park Summary section of the General Plan for a description of the existing park environment, important resource values within the park, and the local and regional environment in the vicinity.

This General Plan is consistent with other applicable regional plans, such as the Marin Countywide Plan, the Local Coastal Plans and Community Plans, and the planning efforts of the National Park Service for the adjacent Point Reyes National Seashore and the Golden Gate National Recreation Area.

POTENTIALLY SIGNIFICANT ENVIRONMENTAL EFFECTS

The purpose of this section is to identify impacts of the project that have the potential for significance and will require more detailed analysis when management plans and development plans are prepared.

According to the CEQA Guidelines Section 15382, a significant effect on the environment refers to a “substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance.” Significant environmental effects are those commonly associated with visitor use, facility rehabilitation, and development projects. These adverse effects can include negative visual impacts, degradation of water quality, and disturbance to or loss of cultural resources, sensitive species, and wildlife habitats.

The term threshold is used to describe levels of impact. Thresholds are standards used to determine if an activity or project will cause, or potentially cause, a substantial adverse physical change. If the project or activity could exceed a threshold, the impact is considered potentially significant. If appropriate mitigation can reduce the impact below the threshold, the impact is considered less than significant. Thresholds of significance used in this analysis are primarily based on criteria from the State CEQA Guidelines, Appendix G, Environmental Checklist Form.

Mitigation is defined as actions that will:

- avoid the impact altogether by not taking a certain action or parts of an action;
- minimize the impact by limiting the degree or magnitude of the action and its implementation;
- rectify the impact by repairing, rehabilitating, or restoring the impacted environment;
- reduce or eliminate the impact over time by preservation and maintenance operations during the life of the action; and
- compensate for the impact by replacing or providing substitute resources or environments (CEQA Guidelines Section 15370).

This General Plan is the first phase of a tiered EIR and, as such, proposed development and associated mitigation are general in nature. Many of the proposed mitigation measures are contained in the plan goals and guidelines. As management plans, development plans, or other projects are proposed, they will be subject to further environmental review. Project-specific impact analysis and mitigation measures will be developed and implemented at that time. The following potential impacts and associated mitigation measures refer to proposals planned within the existing park boundaries.

AESTHETIC RESOURCES

Threshold

The threshold level for an aesthetic impact consists of a management or development activity that will significantly degrade the existing aesthetic character or quality of a site and/or its surroundings, or is incompatible with the character of the park. This includes, but is not limited to, activities or facilities that are visually offensive or have noises or odors that are offensive to both visitors and park neighbors. Implementation of the General Plan would result in significant impacts to aesthetics if it would have a substantial adverse effect on a scenic vista; substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway; substantially degrade the existing visual character or quality of the site and its surroundings; or create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Impact

Potentially significant, unless mitigated.

Discussion

The General Plan focuses on the aesthetic qualities of visual, auditory, and odor resources in the park.

Any changes that substantially degrade visual, auditory, or odor experiences for visitors to the park and others from adjacent property have the potential to cause significant impacts, especially visually. The significance of visual, auditory, or odor impacts is dependent on the expectations and perceptions of the visitors. For example, the presence of facilities or numerous visitors would generally be more visually offensive to those expecting a wilderness experience than to those expecting higher levels of service or social interaction.

The following are identified in the plan as facilities that, if developed, could create significant adverse visual, auditory, or odor impacts within the park:

- Day use facilities, including picnic and boat launching facilities
- Camping facilities
- Parking for day use and campgrounds
- Entrance road/kiosk modifications
- Public and maintenance roads
- Interpretive exhibits/facilities
- Trails, including trail connections and associated support facilities (trailheads)
- Informational signage
- Staff housing

The development of new facilities could create adverse visual impacts if proper design for color, scale, location, style, materials, and architectural mass are not carefully considered. The use of inappropriate colors, design, and materials in a natural landscape or historic setting may be visually offensive.

A parking or camping area with reflective parked vehicles and inappropriate lighting could be a very obvious human-made intrusion to the natural landscape, especially at Marconi Cove, where the proposed parking/camping facilities would be near the shoreline of Tomales Bay. These facilities would be visible from the bay, Highway 1, and the west side of the bay, especially at night if substantial lighting were to be installed. Development of a day use parking area at Tomasini Point would introduce new structures and lighting to this area. Bright or glaring lights would also be a negative visual impact to drivers at night on the roads passing by the proposed vehicle campground in the Heart's Desire Area, and would diminish the ability to observe the dark night skies of the area. Bright lights and other new structures in this campground may be especially visible in the surrounding area as it is located on a hilltop. The proposed trails in the Millerton Point Area that are on elevated ground have the potential for adverse visual impacts on viewers in the region.

Development of outdoor interpretive structures could create adverse visual impacts for park visitors. High-profile directional, informational, and interpretive signs along trails, roads, and highways could also contribute to visual clutter.

The General Plan proposes new facility development that could potentially increase noise levels during normal operation. The addition of day use, campground and interpretive facilities may add increased noise levels through normal visitor use and traffic. Development of these new facilities will involve construction equipment and may cause temporary increased noise levels.

Negative noise impacts could potentially be created by boat engines at the proposed Marconi Cove boat launch and in the bay, and from increased vehicle traffic wherever new facilities have been proposed, such as in the Heart's Desire and Marconi Cove Areas, and from visitor activities in the proposed campgrounds in the Heart's Desire Area.

Negative odors may be associated with improper siting and maintenance of trash collection containers and restrooms, or temporary exposure to construction materials that have offensive odors, such as solvents or paints.

The impacts to positive visual, auditory, and odor resources are considered potential because the actual size, location and design of the facilities or structures have not been determined.

Mitigation

The park's aesthetic qualities should be clearly identified, both overall and as studies for specific projects are implemented (see Guidelines AES-1 and AES-2). Park staff should recognize the importance of creating positive aesthetic values for positive visitor experiences and to incorporate these values in the creation and daily management of park facilities, resources, and interpretation (see Guideline AES-4).

Impacts to visual, auditory, and odor resources can be avoided or reduced by appropriate siting, design, and selection of materials (see Guidelines AES-6, AES-7, AES-8, AES-9). The development of aesthetic design standards and objectives,

management plans, and specific project designs will define aesthetically appropriate design features, identify visual, auditory and odor resources, and identify optimum methods for protecting existing positive resources.

The concept of “positive first impressions” should apply to every human-designed element in the park. Elements that will exist together in specific areas of the park should be organized and presented in a clear and uncluttered way (see Guideline AES-5). The Department will also evaluate the visual impacts of existing directional and informational signs that pertain to visitation both inside and outside the park, and make recommendations to visually improve this signage (see Guideline ACC-12).

The General Plan recommends removal or renovation of the derelict structures on the North Dream Farm Road property, which will improve the visual quality of this potential day use area (see Guideline INV-2).

Appropriate native plant species, rocks, or elevation changes should be used to screen or soften the visual effect of parking areas, campground facilities, roads, and trails; buffer intrusive or distracting views and activities outside park boundaries; and enhance scenic views. The Department will consider constructing facilities partially below grade and building park roads and trails following the natural contours of the land to minimize viewshed impacts, especially for the Millerton Uplands trail and the vehicle campground in the Heart’s Desire Area. Visibility of grading cuts and fills should be minimized, and disturbed areas restored with an appropriate mix of native vegetation species (see Guideline AES-7).

Park interpretive facilities and programs should identify aesthetic resources to interpret for the public in order to generate support for preservation of those resources (see Guideline INT-6).

Noise impacts from campgrounds should be reduced by enforcement of quiet night hours. All recreational areas, including boating areas, should be monitored for noise impacts and park noise standards should be enforced (see Guideline AES-8).

The park will comply with local noise ordinances that provide specific thresholds of significance for noise resulting from construction activities. Stationary construction noise sources, such as generators, should be located as far as possible from sensitive receptors. Noise generated by additional traffic as a result of new park facilities will be mitigated by the plan’s recommendation that vehicular traffic to and from the park be reduced by emphasizing non-vehicular public access and public transit (see Guidelines ACC-5, ACC-6, ACC-8).

Maintenance and service functions should be located away from public areas to help preserve the values of silence and natural sounds. Interpretive stops, day use areas, and campsites should be located so that natural sounds dominate. Visitor use areas should be located away from and upwind of heavily-traveled roadways, if possible (see Guideline AES-8).

All park plans and projects will be in compliance with local, state, and federal permitting and regulatory requirements and subject to subsequent tier CEQA review and project specific mitigation. Mitigation will be implemented in later planning and development stages.

Conclusion

The impacts to aesthetic resources can be reduced to a less than significant level by implementing the General Plan guidelines and project specific mitigation measures.

Responsibility: Department of Parks and Recreation Staff/Landscape Architect, and other mandated contracting authorities.

Monitoring/Reporting: Completion of required resource evaluations and development plans prior to implementation of specific projects, as part of the subsequent tier CEQA review.

AIR QUALITY

Threshold

Air quality impacts resulting from General Plan proposals would be considered significant if the project would conflict with or obstruct implementation of applicable air quality plans; violate any air quality standards or contribute substantially to an existing or projected air quality violation; result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard; expose sensitive receptors to substantial pollutant concentration; or create objectionable odors affecting a substantial number of people.

Impact

Potentially significant unless mitigated.

Discussion

The General Plan proposes a number of facilities that may have an impact on air quality. Development and maintenance of the following facilities could create significant adverse impacts:

- Day use facilities, including picnic and boat launching facilities
- Camping facilities
- Parking for day use and campgrounds
- Entrance road/kiosk modifications
- Public and maintenance roads
- Trails, including trail connections and associated support facilities (trailheads)
- Natural resource management activities

In general, the region has very good air quality. Dust and vehicle emissions from site preparation and construction of facilities proposed in the General Plan may create

temporary air quality impacts. Air quality may also be temporarily impacted by prescribed burning programs or wildfires in the park.

Mitigation

The air quality impacts from construction can be substantially reduced by the use of dust control measures and other construction best management practices. Dust control measures should be developed during site-specific planning as an element of sustainable design for site development and in future project development review and implementation. When constructing new facilities, temporary closure of nearby visitor areas should be considered if odors from materials such as paints or solvents will be offensive to visitors.

The Department will develop a Prescribed Fire Management Program that should identify conditions under which prescribed burning will be allowed and that minimizes impacts to air quality (see Guideline VEG-8). The Department should work with local and regional fire control agencies to minimize impacts to air quality from prescribed burning in the park and from any wildfires that may occur (see Guideline VEG-8).

There may be increased park visitation as a result of additional directional signage on regional roads as well as expanded facilities and interpretive opportunities. The majority of visitors arrive by private vehicle, with some arriving by bus. An increase in visitor use may cause a minor increase in total vehicle emissions in the region. Marin County is currently developing an updated Countywide Plan that will focus on the benefits and future construction of public transit for the community and park visitors. The Department should coordinate with Marin County to implement alternative transportation opportunities for park access (see Guidelines ACC-5, ACC-6, ACC-7, and ACC-8).

The Department will continue to comply with all local, state, and federal regulations regarding air quality. Air quality impacts resulting from this project will not be significant.

Conclusion

Impacts to air quality can be mitigated to a less than significant level through the implementation of General Plan guidelines and future project specific mitigation measures.

Responsibility: California State Parks Staff/Resource Ecologist, and other mandated contracting authorities.

Monitoring/Reporting: Completion of required resource evaluations and development plans prior to implementation of specific projects, as part of subsequent tier CEQA review.

BIOLOGICAL RESOURCES

Threshold

Implementation of the General Plan would have a significant effect on biological resources if it were to:

- have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies, or regulations or by the California Department of Fish and Game (CDFG) or the U.S. Fish and Wildlife Service (USFWS)
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFG or USFWS (defined as substantial reduction, disturbance, or alteration, or actions that reduce, disturb or alter critical habitat, cause a fish or wildlife habitat to drop below self-sustaining levels, reduce the number or restrict the range, or threaten to eliminate an animal community)
- have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan

Impact

Potentially significant, unless mitigated.

Discussion

Human activities and associated impacts (including agricultural production, ranching, and urban development) have altered native plant and animal communities throughout the region, including lands in what is now Tomales Bay State Park. The remaining habitats that have survived provide food, shelter, and nesting sites for sensitive species and are highly valued park resources. Consequently, protection and restoration of these habitats, especially forest, riparian, wetland, and marine communities is essential and will help ensure the stability of plant and wildlife populations.

Sensitive wildlife, habitats, and plant communities occur at Tomales Bay State Park. There are 80 special status sensitive animal species with potential habitat in the park. Fifty five of these are birds. Included in the list of 470 species of birds that make the Tomales Bay watershed their home are the northern spotted owl, the common loon, and the American white pelican. Other threatened or endangered species living in the watershed include coho salmon, steelhead trout, and California freshwater shrimp. The Tomales Bay watershed is an important resting and foraging stop for migrating birds on

the Pacific flyway where they feed in marshes and are attracted by fish runs in the bay. Sensitive raptors such as the northern spotted owl, listed as federally threatened, have been seen on the eastern shores of the bay. The northern spotted owl is also known to occur in the forested areas of the Inverness and Heart's Desire Areas and is sensitive to noise disturbance. The California red-legged frog has been reported in the Heart's Desire Area; the Point Reyes mountain beaver and several species of bats, state and federal species of concern, are known to inhabit the park area.

There are two sensitive plant communities at Tomales Bay State Park listed in the CDFG's California Natural Diversity Database (2002). These are the coastal terrace prairie, in parts of the Heart's Desire, Millerton, and North Marshall Areas and the northern coastal salt marsh in the low areas of the Millerton and Heart's Desire Areas. In addition, there are fifteen sensitive plants known to occur within Tomales Bay State Park. There are important habitat linkages both within the park and between the park and surrounding properties, such as riparian corridors with continuous vegetative cover and connections between the Point Reyes Peninsula and the mainland. Facility rehabilitation and development, including additional trails and regional trail linkages, have the potential to disturb, degrade, or remove habitat or sensitive plant and wildlife communities. The introduction of new facilities and structures into previously undisturbed areas of the park could create substantial adverse impacts on wildlife.

A comprehensive survey of the park's biological resources has not been completed; therefore there is the potential for additional sensitive resources at the park. Potential significant impacts to these biological resources may occur during facility development, construction, rehabilitation, or resource management as proposed in the General Plan.

Development of the following facilities and activities could create significant adverse impacts on biological resources within the park, especially the introduction of new facilities and structures into previously undisturbed areas.

- Day use facilities, including picnic and boat launching facilities
- Camping facilities
- Parking for day use and campgrounds
- Entrance road/kiosk modifications
- Public and maintenance roads
- Interpretive exhibits/facilities
- Trails, including trail connections and associated support facilities (trailheads)
- Informational signage
- Staff housing

The plan identifies the majority of potential facility development in areas that have been previously disturbed. There would be minimal adverse impacts to vegetation and wildlife in these portions of the park.

Ground disturbance, including grading, soil compaction, or vegetation removal, has the potential to provide habitat for non-native invasive species. Ground disturbance could include new facility construction (structures, parking lots) as well as trail and

campground development. Trails and roads can also become dispersal corridors for invasive plants. The spread of invasive species, especially in previously undisturbed native habitats or sensitive habitats, may have adverse impacts by promoting the loss of native habitat and reducing species diversity.

Vegetation management in the park can result in significant impacts as well as pose potential risks to humans and property. Among management activities that will require further impact assessment prior to implementation are prescription burning of vegetation, habitat restoration projects (including stream restoration, soil grading, and other activities), and removal of plants, whether exotic or native.

Mitigation

The General Plan proposes a number of guidelines to preserve, enhance, and minimize disturbance to vegetation and wildlife. Comprehensive natural resource management plans, including Vegetation Management, Wildlife Management, and Watershed Management Plans will be developed that will provide guidance for identification, protection, habitat restoration, and adaptive management of the park's resources, especially species of special concern and sensitive habitats.

Site-specific surveys for sensitive species and habitats will be completed as part of the planning process for resource management projects, construction, maintenance, or rehabilitation of facilities and trails. If necessary, state and federal resource agencies may be consulted to assist with appropriate resource protection, habitat enhancement, and management techniques (see Guidelines in the Vegetation- and Wildlife Management Goals, Guidelines and Study sections).

Recreational facility development will be minimized in areas of spotted owl nesting habitat and in other similar sensitive species habitat. Noise-producing activities such as construction or maintenance activities will be minimized during breeding season and will comply with the Endangered Species Act and applicable federal and state regulations (see Guidelines WIL-6, WIL-12, WIL-1). Buildings will be inspected for sensitive species, including bat populations and protective measures established prior to major maintenance, construction, or structure demolition (see Guideline WIL-8).

If there is any potential for significant adverse effects, proposed facilities will be redesigned to avoid impacts, or appropriate mitigation measures will be developed to reduce the impacts to a less than significant level. All activities and new facility development in areas of known sensitivity would be minimized (see Guideline VEG-1). This may include limiting access to some areas of the park, or temporarily closing or relocating facilities to promote restoration. Construction and restoration will be scheduled whenever possible to avoid disturbance to sensitive wildlife, especially during the breeding season (see Guideline WIL-6).

The planning areas outlined in the General Plan will also provide additional resource protections by designating appropriate land use, facility development, and visitor use areas, resulting in a substantial reduction in opportunities for facility development and adverse visitor use impacts in sensitive areas.

Visitor use impacts to wildlife can be substantially reduced or eliminated by placing facilities away from known nesting sites and sensitive habitat. However, all impacts cannot be avoided because the range of some animals may include the entire park. As much as possible, efforts will be made to reduce or eliminate human influences to wildlife (including access to food and garbage and noise impacts - see Guidelines WIL-2, AES-8). An expanded interpretive program for natural resources is proposed that would promote public understanding, education, and stewardship (see Guideline INT-1).

The plan proposes goals, guidelines, and a Vegetation Management Plan to address the existing negative impacts of invasive exotic plant species (see Guidelines VEG-4 through VEG-7).

The plan proposes protection of sensitive plant and animal species of terrestrial, estuarine, intertidal, and marine environments. The plan's Adaptive Management Process, found in the Carrying Capacity section, describes a process for evaluating, monitoring, and mitigating visitor impacts, including recreational impacts on sensitive wildlife such as harbor seals.

For continued resource protection and enhancement, on-going communication and cooperation with regulatory agencies, local jurisdictions, and adjacent landowners will be pursued to encourage conservation easements and acquisition of property from willing sellers for buffers and habitat linkages (see Guidelines ACQ-1, WIL-16).

Foremost among the necessary precautions observed during the planning and implementation of resource management is adherence to existing laws, regulations, and protocols. Mitigation strategies will include avoidance and minimization of impacts, or compensation for unavoidable impacts. The environmental disclosure process requires that all such planning be developed with the participation of the local public and all appropriate agencies. Activities with the potential for impacts beyond park boundaries will include disclosure of potential impacts specific to each activity. Mitigation for future significant impacts shall be developed as part of the planning and environmental disclosure process.

All plans and projects will be in compliance with local, state, and federal permitting and regulatory requirements and subject to subsequent tier CEQA review and project specific mitigation.

Conclusion

Impacts to biological resources can be mitigated to a less than significant level by implementing the General Plan guidelines and project specific mitigation measures.

Responsibility: California State Parks Staff/Resource Ecologist, and other mandated contracting authorities.

Monitoring/Reporting: Completion of required resource evaluations and development plans prior to implementation of specific projects, as part of subsequent tier CEQA review.

CULTURAL RESOURCES

Threshold

The threshold level for a cultural resources impact consists of a management or development activities that will cause a substantial loss or destruction of the historic or prehistoric fabric or structure(s) that eliminate examples of California history or prehistory; consist of additions or alterations, including non-historic additions and repairs, that adversely impact or substantially alter the visual continuity of a cultural resource or landscape. Implementation of the General Plan would result in significant impacts to cultural resources if it would cause a substantial adverse change in the significance of a historical resource, as defined in CEQA Guidelines Sec. 15064.5; cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Sec. 15064.5; directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or disturb any human remains, including those interred outside of formal cemeteries.

Impact

Potentially significant, unless mitigated.

Discussion

Tomales Bay State Park contains potentially significant cultural resources that could be destroyed or degraded by new development and facility improvements proposed in the General Plan. These resources include prehistoric and ethnographic sites, historic and ethnohistoric resources, cultural landscapes, historic roads, railroad lines, and recreation sites. Archeological deposits, primarily shell midden sites, are important features. There has not been a complete inventory of the park's cultural resources; therefore, there is potential for the discovery of previously unknown prehistoric and historic sites during facilities construction, rehabilitation, resource management projects, restoration, or maintenance operations. Areas in the Heart's Desire Planning Area are of greatest concern. This is where many known important cultural resources are located and where one of the highest rates of visitor use will occur.

The following are identified in the plan as potential facilities and activities that could create substantial adverse impacts on cultural resources within the park:

- Day use facilities, including picnic and boat launching facilities
- Camping facilities
- Parking for day use and campgrounds
- Entrance road/kiosk modifications
- Public and maintenance roads
- Interpretive exhibits/facilities
- Trails, including trail connections and associated support facilities (trailheads)
- Informational signage
- Staff housing
- Resource management projects

Interpretive facilities and trails and their associated amenities, such as picnic sites, placed in or near sensitive cultural features can potentially decrease cultural values and increase the threat of vandalism or damage to these resources due to additional public use.

Potential adaptive reuse of historic structures could involve the modification, replacement, or removal of historic fabric such as walls, doors, windows, hardware, and utilities or introduce non-historic elements to a structure, including access ramps, furniture, and heaters.

All areas proposed for development will require cultural resource inventories on a project-by-project basis if they have not been previously inventoried.

Mitigation

Prior to construction, demolition, major repairs, implementation of interpretive programs, adaptive reuse of historic structures or sites, or other site-specific development, areas of potential impact should be inventoried and reviewed to determine the presence and significance of cultural resources, the potential impact, and recommended mitigation, if appropriate. Impacts may be reduced by project avoidance, site capping, structural stabilization/renovation, project redesign, and data recovery.

All construction, maintenance, or improvements of historic structures will be in conformance with *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (Weeks and Grimmer 1995) and the California Historical Building Code (see Guideline CUL-1).

The General Plan proposes development of a Cultural Resources Management Plan which would contain guidelines to establish an ongoing management process to record and develop findings of significance for cultural resources in the park that are historically or archeologically important. General Plan designated planning areas may provide additional resource protections by authorizing specific park areas for development and appropriate recreational activities.

All plans and projects will be in compliance with local, state, and federal permitting and regulatory requirements and subject to subsequent tier CEQA review and project specific mitigation.

Conclusion

Impacts to cultural resources will be mitigated to a less than significant level through the implementation of General Plan goals and guidelines and any additional site-specific mitigation measures.

Responsibility: Department of Parks and Recreation Staff/Cultural Resource Specialist, and other mandated contracting authorities.

Monitoring/Reporting: Completion of required resource evaluations and development plans prior to implementation of specific projects, as part of the subsequent tier CEQA review.

GEOLOGY AND SOILS

Threshold

A significant geologic, soil, and/or seismic impact would be expected to occur if the project would expose visitors or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides. Significant impacts would be expected if the project would result in substantial soil erosion or loss of topsoil; be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse; be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial risks to life or property, or has soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

Impact

Potentially significant, unless mitigated.

Discussion

The General Plan proposes a number of facilities that may have an impact on the park's geology and soils. Development and maintenance of the following facilities could create significant adverse impacts:

- Day use facilities, including picnic and boat launching facilities
- Camping facilities
- Parking for day use and campgrounds
- Entrance road/kiosk modifications
- Public and maintenance roads
- Interpretive exhibits/facilities
- Trails, including trail connections and associated support facilities (trailheads)
- Staff housing
- Natural resource management activities

There are specific areas within the park boundaries with the potential for landslides and flooding. The entire region has experienced earthquakes, being adjacent to the San Andreas Fault system. Earthquake-induced damage can be expected within the park, including damage from ground shaking, ground surface rupture, liquefaction, lateral spreading, landslides, tsunamis and seiches.

Park properties on the east side of the bay have soils that are subject to landslides, specifically slow-moving debris flows and soil creep, and are highly erodible. Human-caused land disturbances such as grading and trail development can trigger or

accelerate these conditions. In addition, the steep topography and soil types on the west side of the bay can create the potential for landslides and erosion. In 1982 a large landslide occurred on the North Dream Farm Road property, inundating the riparian area near the proposed day use facilities.

Development of the General Plan's proposals would decrease permeable areas in the park, leading to greater runoff rates and concentrated flows that have greater potential to erode exposed soils. Gullies could form that would have the potential of undermining structures and vegetation.

Existing septic systems in the park may be inadequate to process the amounts of waste they are currently processing, potentially contaminating surrounding soils and resource areas.

Mitigation

The General Plan provides a number of guidelines to protect the public from natural hazards, such as the use of interpretive media to educate visitors about natural hazards and how to avoid danger (see SAF-1) and limiting the construction of facilities within active fault trace zones as required by the 1972 Alquist-Priolo Earthquake Fault Zoning Act (see SAF-6).

Site specific surveys to identify potential hazardous geologic or soil areas should be conducted prior to any permanent facility development, and construction of facilities in these areas avoided if appropriate (see Guidelines SAF-2, SAF-5).

Interpretive and other park visitor information programs will warn of potential dangers and how visitors can stay safe (see Guidelines SAF-1, ACC-12).

Removal or regrading of roads and trails in the park should follow best management practices from local Resource Conservation Districts and Natural Resources Conservation Service to reduce soil erosion (see Guideline WAT-5). Development of facilities in the park should follow best management practices to reduce soil erosion, ensure successful wastewater treatment, and other soil/water quality issues as described by the San Francisco Bay Regional Water Quality Control Board and other regulatory agencies (see Guideline WAT-7).

Visitors will be discouraged, through signing or other programs, from walking or bicycling on unimproved slopes.

Future projects will be subject to further, more detailed review. The project will not result in or expose people to substantial geologic or soil hazards.

Conclusion

Impacts to geology and soils can be mitigated to a less than significant level through the implementation of General Plan guidelines and future project specific mitigation measures.

Responsibility: California State Parks Staff/Resource Ecologist/Geologist, and other mandated contracting authorities.

Monitoring/Reporting: Completion of required resource evaluations and development plans prior to implementation of specific projects, as part of subsequent tier CEQA review.

HAZARDS AND HAZARDOUS MATERIALS

Threshold

Significant impacts to people or structures would be expected to occur if the project:

- exposed people or structures to hazardous materials through the routine transport, use or disposal of hazardous materials; exposed people or structures to accidents or conditions involving the release of hazardous materials, substances, or waste into the environment; exposed people or structures to hazardous materials through the emission or handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- was located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code 65962.5, and as a result, create a significant hazard to the public or environment;
- was located within airport land use plan or within two miles of a public airport, or in the vicinity of a private airstrip, resulting in a safety hazard for people residing or working in the project area;
- impaired implementation of or physically interfered with an adopted emergency response plan or evacuation plan;
- exposed people or structures to a significant risk of loss, injury, or death from wildland fires, including areas where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Impact

Potentially significant, unless mitigated.

Discussion

The General Plan proposes a number of facilities and activities that may expose people or structures to hazards or hazardous materials, especially during construction or maintenance activities, and to wildfires originating in the park or on surrounding lands. Development, use, and maintenance of the following facilities could create significant adverse impacts:

- Day use facilities, including picnic and boat launching facilities
- Camping facilities
- Parking for day use and campgrounds
- Entrance road/kiosk modifications
- Public and maintenance roads
- Interpretive exhibits/facilities

- Trails, including trail connections and associated support facilities (trailheads)
- Staff housing
- Natural resource management activities

There is asbestos in the existing permanent residential structure in the lower North Dream Farm Road area.

During construction of facilities, ground disturbance may expose contaminated soils or water through excavation, especially in areas of historic land uses. Construction activities may require the use of certain potentially hazardous materials, such as fuels, oils, and solvents for construction equipment. Spills of hazardous materials may occur, including into drainages within the park.

The General Plan proposes the development of campgrounds and other facilities in the park, which if implemented may increase the risk of wildfire from construction activities, campfires, smoking, and other sources of potential fire.

The Department uses herbicides in the park to help control pests and vegetation where appropriate.

Mitigation

In the event that any building in the park that is found to contain asbestos is removed or remodeled, or any other hazardous materials are found in the park, including during construction and maintenance activities, all regulations for hazardous material transport, use, and disposal will be adhered to (see Guideline SAF-8).

The development of recreational facilities such as campgrounds on the west side of the bay and trails and day use areas on the east side of Tomales Bay and in the Inverness Ridge area would allow increased public use of areas that can have high potential for wildfire. The General Plan recommends the development of a Wildfire Management Plan that would address potential wildfire risks and specify emergency actions for the protection of public safety, park structures, and adjacent landowner structures. The Wildfire Management Plan would also specify strategies for pre-suppression measures such as the creation of defensible space around structures, wildfire education programs and park fire regulations. It should also address Prescribed Fire Management Programs to assess risk of wildfire from natural resource management activities.

Staff will follow Department policies and other state and federal requirements for the application of herbicides and pesticides. Herbicides will be applied strictly by a Certified Pesticide Applicator, following the guidance and direction of a licensed Pest Control Advisor, and incorporating all safety measures and recommended concentrations. Only herbicides that are appropriate for use near water will be used in or near seasonal wetland areas.

Future projects will be subject to further, more detailed review. Should any hazardous substances or other health hazards be identified appropriate warning and protective

methods should be developed and implemented. The project will not result in or expose people to substantial health hazards.

HYDROLOGY AND WATER QUALITY

Threshold

Implementation of the General Plan would result in significant adverse impacts to hydrology and water quality resources if the proposals would:

- violate a water quality standard or waste discharge requirement;
- substantially alter the existing drainage pattern of an area in a manner that would result in substantial erosion, siltation, or flooding on- or off-site;
- create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- otherwise substantially degrade water quality;
- place housing with a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- place structures within a 100-year flood hazard area which would impede or redirect flood flows;
- expose people or structures to significant risk of loss, injury, or death involving flooding, including flooding from the failure of a levee or a dam;
- or be subject to inundation by seiche, tsunami, or mudflow.

Impact

Potentially significant, unless mitigated.

Discussion

Tomales Bay has been listed by the state and the federal governments as an impaired water body due to high levels of pathogens, nutrient levels, mercury, and sediment. Contributing factors thought to be involved that possibly exist in the park include substandard or inadequate sizes of septic systems, especially in flood and riparian zones; and boating and other recreational uses and soil erosion/water runoff. The General Plan proposes a number of facilities that may have an impact on water quality. Development and maintenance of the following facilities could create significant adverse impacts:

- Day use facilities, including picnic and boat launching facilities
- Camping facilities
- Parking for day use and campgrounds
- Entrance road/kiosk modifications
- Public and maintenance roads
- Interpretive exhibits/facilities
- Trails, including trail connections and associated support facilities (trailheads)
- Staff housing

- Natural resource management activities

Surface waters within the park include several unnamed permanent and ephemeral creeks, and Millerton Creek on the east side of the bay, that drain to Tomales Bay. Some of these creeks are or will be adjacent to existing recreation facilities as well as future proposed development and are highly susceptible to water quality impacts. Sedimentation of the park's creeks may increase turbidity and physically alter streambeds and the fragile and dynamic marine resources of the bay. Important among these would be the small estuaries found at the outflow of several creeks that are important dynamic habitat for wildlife and critical to the food chain for commercial oysters through the production of plankton. As tributaries of Tomales Bay, any increase in sediment loading to creeks may be considered a significant impact.

Soils in many areas of the park are classified as moderate to highly erodible. Any proposed soil disturbing activities or increases in impervious surfaces may contribute to potentially significant adverse impacts to water quality unless mitigated.

Human activities in the Tomales Bay watershed can greatly accelerate the rate and amount of erosion and sedimentation. Activities at the park that could increase sedimentation may include construction of new facilities, rehabilitation of existing facilities, operations and maintenance practices, and outdoor recreation.

Potential impacts associated with construction practices include soil and vegetation disturbance from grading, filling, and construction equipment use and storage. Surface and groundwater contamination may occur from construction materials, such as concrete, paint, and other chemical products. Ground disturbance, especially in floodplains and wetlands, may reduce the natural processes for sediment and nutrient absorption.

Impervious surfaces may contribute to water pollution as a source of vehicle contaminants, such as oils, grease and other petroleum and chemical products. These substances become suspended or dissolved in storm water runoff and may enter surface or groundwater.

Normal park operations may include trail maintenance and vegetation removal by mechanical or chemical methods. These practices can disturb the ground surface, contributing to increased erosion and sedimentation, and excess pesticides may enter groundwater or surface waters.

Recreation impacts can include soil compaction in campgrounds, day use areas, and along trails, stream banks, and the bay's shores. Intense visitor use may also cause increased erosion on trails, disturbance to or destruction of sensitive wetland and riparian vegetation due to trampling, and watershed damage by human-caused wildfires.

The General Plan recommends a boat launch be located at Marconi Cove; if motorboats are permitted to use this boat launch, the motors of such craft might impact water

quality by leaking small amounts of fuel or oil and could potentially impact the commercial oyster farm beds, marine animals, and other wildlife adjacent to Marconi Cove.

Mitigation

The Department will comply with all applicable water quality control standards developed by the San Francisco Bay Regional Water Quality Control Board, including measures to help reestablish bay water quality compliance levels. Compliance will be achieved through the implementation of park guidelines, appropriate best management practices, and site-specific mitigation measures, if necessary. The use of best management practices for erosion control and surface runoff should be developed for projects in the park, when appropriate. Minimize impacts to soils, vegetation, and park water quality from grading, filling, construction equipment use and storage, and mechanical or chemical control in resources and facilities management programs (see Guidelines WAT-7, SUS-5).

The General Plan recommends actions supporting the goals of the regional Tomales Bay Watershed Stewardship Plan completed by the Tomales Bay Watershed Council to improve the water quality of Tomales Bay and to restore the environmental integrity of the entire watershed (see Guideline WAT-10). These actions include monitoring park water resources to ensure the cleanest water possible, and reducing erosion into creeks flowing to the bay. The Department will be monitoring the development of recommended assessments in the Stewardship Plan for the ecological effects of recreational boating on the bay. The effects of boat motors on commercial oyster farming and other natural resources will help evaluate the appropriateness of the General Plan's recommendation for potential motorboat launching at Marconi Cove. In addition, the park currently tests and monitors the west shore beach waters and the septic systems in these locations, and will continue to do so along with any other recommended water quality monitoring activities (see Guideline WAT-8).

The plan proposes the development of a Watershed Management Plan for the park that will define current conditions, identify data gaps, and determine where mitigation is needed. This plan will analyze such elements as sediment sources, transport functions, and fluvial geomorphic conditions in streams, and assess impacts to ecology, the watershed, and water quality from recreation and other park activities. The Department will restore geomorphic function to the watershed to the extent possible, thereby substantially reducing or eliminating unnatural soil and stream bank erosion, stream sedimentation and habitat degradation, and to eliminate where possible manmade channel restrictions or obstructions within the park's watersheds (see Guideline WAT-3).

As part of the planning process for any proposed development of site-specific plans, resource management plans, or facility construction, site-specific studies of soil conditions and facility siting will be conducted. All new projects, rehabilitated facilities, and increased visitor use in the park will be evaluated to ensure that they do not contribute to degradation of water quality (see Guideline SAF-2). Potential mitigation

measures for construction impacts may include the use of erosion control best management practices to stabilize soils during construction and for any activities that involve soil disturbance; protecting all non-construction areas to prevent unnecessary disturbance; restabilizing and revegetating areas at the completion of construction; and avoiding storage of surplus or waste materials in floodplains, in areas of potential landslides, near surface waters, or in drainages.

Natural vegetation, soils, and the duff layer will be protected and restored to preserve natural infiltration. Erosion control practices will be used near surface waters for all activities that disturb the ground surface, and existing natural drainage patterns will not be significantly modified, unless to restore original conditions, allow for new facilities construction, or to modify negative impacts to cultural or natural resources or properties caused by the drainage.

Recreational facilities will be designed to minimize water quality impacts by avoiding disturbance to steep slopes, highly erodible soils, and riparian and wetland areas (see Guideline TRL-4). Recreation impacts may be avoided or reduced by utilizing erosion control measures near surface waters for all human activities which disturb the ground surface, and developing ongoing programs of trail maintenance and watershed restoration for areas disturbed by recreational use. Best management practices will be applied, where feasible, to new campgrounds, day use areas, roads and trails to reduce erosion and provide appropriate treatments for storm water runoff, as necessary. To allow the recovery of compacted soils and natural vegetation, temporary closure, remodeling, or relocation of campgrounds and other facilities will be considered.

Erosion control practices should be used near surface waters for all activities that disturb the ground surface (see Guideline WAT-7).

To avoid potential impacts to water quality, efforts will be made to discourage park visitors from entering sensitive habitat areas, including wetlands, riparian areas, and streambeds (see Guideline WIL-8). Appropriate biotechnical stream bank erosion control methods may be utilized where feasible.

Interpretive programs will educate the public on ways to improve and maintain water quality, including information on the water quality impacts of recreation (see Guidelines INT-7, INT-10).

Future implementation of specific projects will be subject to a more extensive analysis of potential impacts and mitigation during subsequent environmental review.

Conclusion

Impacts to water quality can be mitigated to a less than significant level through the implementation of General Plan guidelines and future project specific mitigation measures.

Responsibility: California State Parks Staff/Resource Ecologist/Geologist, and other mandated contracting authorities.

Monitoring/Reporting: Completion of required resource evaluations and development plans prior to implementation of specific projects, as part of subsequent tier CEQA review.

UNAVOIDABLE SIGNIFICANT ENVIRONMENTAL EFFECTS

Evaluation at the specificity of this first tier review indicates that the potential effects from projects proposed in this General Plan can be reduced to a less than significant level with appropriate facility siting, the implementation of the goals, guidelines, and resource management programs, and the development of other specific mitigation measures when future site-specific development plans are proposed.

Until the uses, locations, and scope of facilities or management plans are specified the actual level of impact, whether individual or cumulative, cannot be determined. However, all plans and projects are required to be in compliance with local, state, and federal permitting and regulatory requirements and subject to subsequent tier CEQA review and project specific mitigation.

Unavoidable significant environmental effects are not anticipated as a result of the proposals in this General Plan/Environmental Impact Report.

SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

No significant irreversible changes to the physical environment are anticipated from the adoption and implementation of this General Plan.

Facility development, including structures, roads, and trails, may be considered a long-term commitment of resources; however, the impacts can be reversed through removal of the facilities and discontinued access and use. The Department does remove, replace, or realign facilities, such as trails and campsites, where impacts have become unacceptable either from excessive use or from a change in environmental conditions.

The construction and operation of facilities may require the use of non-renewable resources. This impact is projected to be minor due to the limited amount of facilities planned for development and to the consideration of sustainable practices in site design, construction, maintenance, and operations as proposed in the General Plan. Sustainable practices used in design and management emphasize environmental sensitivity in construction, the use of non-toxic materials and renewable resources, resource conservation, recycling, and energy efficiency.

Destruction of any significant cultural resource would be a significant irreversible effect. To avoid this impact, proposed development sites will be surveyed for cultural resources; all site and facility designs shall incorporate methods for protecting and preserving significant cultural resources; and human activities will be monitored to ensure protection of cultural resources.

GROWTH-INDUCING IMPACTS

If implemented completely, the General Plan may indirectly foster economic and population growth in the region.

With complete development of all proposals, park visitation is likely to increase. This would be due to the improvements and development of day use facilities, group and individual campground areas, interpretive opportunities, and improvements to park circulation, including new trails and trail linkages from the park to regional trails. Additional directional and informational signage outside the park boundaries (on the highway and in the community) should raise the park's profile as a destination for the recreational opportunities and interpretation of natural and cultural resources there.

Any improvement or increase in capacity can encourage increased use, which may create additional tourism and the need for tourist services in the adjacent communities and surrounding region. The proposals in the General Plan may potentially foster economic growth in the region by encouraging an increase in supporting recreation and tourist services, such as recreation equipment, supplies, food, and related facilities. The economy of the Tomales Bay area depends greatly on recreation and tourism, and an increase in visitor use may be considered an economic benefit.

The increased visitor capacity and interpretive potential of the plan's proposals may result in the need for an increased number of permanent and seasonal park staff. The General Plan also recommends consideration of additional staff housing within the park boundaries or in future acquisitions of land for the park. These proposals may result in a minimal growth impact to the area.

Population growth in the state and region will continue to create an increased use and demand for recreational opportunities at Tomales Bay State Park. California's population continues to grow; the Marin Countywide Plan update indicates that between 2000 and 2020 Marin County's population is projected to grow by 11%, and that travel is increasing in the region with travel spending in Marin doubling between 1992 and 2000.

ALTERNATIVES

Three alternatives to the preferred alternative were considered in the planning process:

- Alternative 1 – No Project
- Alternative 2 – Minimal New Facilities (Reduction from Preferred Alternative)
- Alternative 3 – Further New Facility Reduction (Reduction from both Preferred Alternative and Alternative #2)

ALTERNATIVE 1: NO PROJECT

DESCRIPTION

The California Environmental Quality Act requires an evaluation of the specific “no project” alternative and its impact [CEQA Guidelines Section 15126.6(e)(1)]. The no project alternative describes the existing conditions, as well as the physical conditions that are likely to occur in the future if the project (the proposed plan) is not approved. The purpose of describing and analyzing a no project alternative is to allow decision-makers to compare the impacts of approving the proposed project with the expected impacts of not approving the project.

If a general plan is not implemented for Tomales Bay State Park the existing situation will continue for park development, operation, and management. Development within the park would be restricted to projects that:

- repair, replace, or rehabilitate an existing facility;
- provide a temporary facility, so long as the construction does not result in the permanent commitment of resources;
- are necessary for the protection of public health and safety; or
- provide emergency measures necessary for the immediate protection of a natural or cultural resource [Public Resources Code 5002.2(c)].

EVALUATION

The existing conditions, lack of needed facilities, and limitations would continue if the General Plan were not adopted. Without the facility improvements to accommodate the existing visitor demand as well as a projected increase in visitor use, sensitive natural and cultural resources may be expected to degrade over time due to overuse.

Under the no project alternative the park’s natural and cultural resources may not receive an increased level of protection. Comprehensive park-wide resource management plans and policies for natural and cultural resources may not be developed. The Bishop pine forest areas in the park would continue to decline, and the cultural, natural, and aesthetic resources that were impacted by the original construction of the Heart’s Desire Beach parking area would continue to be negatively impacted. Under the no project alternative cultural resource protection would be limited. Development of a systematic assessment process to determine the future treatment of cultural resources within the park would be unlikely because implementation of new programs would require adoption of a general plan.

Recreational demand in Marin County is increasing every year and there have been requests by the public to expand recreational opportunities at the park. However, without a general plan, the Department would not have the authority to develop or enhance facilities to respond to this demand, especially for overnight use, increased opportunities for access to the bay, or for development of the recent land acquisitions on the east side of the bay. Recreational and interpretive improvements that could enhance the visitor experience at the park’s current level of use or anticipated future needs would not be developed.

Under the no project alternative a comprehensive evaluation of park, regional, and statewide trail systems may not be accomplished. Opportunities to create a higher quality visitor experience through trail linkages to the California Coastal Trail, regional recreation areas or to other view sites could be missed.

Under the no project alternative, land use management may not be evaluated on a park-wide basis, and the park's potential for planned and integrated land use, positive visitor experiences, recreational facility development, and possible future acquisitions may not occur. Without an organized land use plan, management plans, and development guidelines, incremental cumulative impacts may adversely impact the park in the future.

Traffic and circulation improvements may not be accomplished with the "no project" alternative. Improvements to traffic flow and operational procedures in initial visitor contacts at the Heart's Desire Area entrance area may not be accomplished. Improvements to informational and directional signage may not occur. The existing visual and aesthetic character of the park may not be improved under the no project alternative, or enhanced in an important way, and existing scenic and other aesthetic resources may be affected.

ALTERNATIVE 2: MINIMAL NEW FACILITIES (REDUCTION FROM PREFERRED ALTERNATIVE)

DESCRIPTION OF ALTERNATIVE

Alternative 2 contains the same key components and scope as the preferred alternative with the exception of the following:

Heart's Desire Area

- No group campground
- No redesign of beach boat launch area

Millerton Point Area

- Smaller day use parking areas at Tomasini and Millerton Points
- Shorter Millerton Uplands Loop Trail

Marconi Cove Area

- Smaller day use parking area

This alternative was considered to reduce natural and cultural resource impacts by reducing the proposed sizes of day use facilities on the east side of the bay and eliminating the group campground at Heart's Desire Area.

EVALUATION

Alternative 2 would attain most of the basic project objectives. Implementation of actions and mitigation measures similar to those included in the proposed General Plan would

reduce impacts to a less than significant level. There would be less overall negative impacts to natural and cultural resources in the park than in the preferred alternative. This alternative would allow fewer park visitors at proposed day use facilities in the natural areas of the recently-acquired east side parcels, and fewer overnight visitors in the Heart's Desire Area with the elimination of a group campground at the former "hike/bike" campground site. It does not propose a redesign of the boat launch area at Heart's Desire Beach, which would not serve boaters or beach users as well as the preferred alternative, where boater/ non-boater circulation conflicts would be minimized.

Alternative #2 would provide resource protection; however, this alternative decreases the range of recreational opportunities in the park, especially in the newly-acquired parcels on the east side of the bay. It does not respond to the increasing demand for camping, mountain bike use, and hiking opportunities in the region, or for more places to pull off Highway 1 for rest and recreation.

ALTERNATIVE 3: FURTHER NEW FACILITIES REDUCTION (FROM THE PREFERRED ALTERNATIVE AND ALTERNATIVE 2)

DESCRIPTION OF ALTERNATIVE

Alternative 3 contains the same components as the preferred alternative with the exception of the following:

Heart's Desire Area

- No group campground
- No redesign of beach boat launch area

Inverness Area

- No day use parking or picnic area at North Dream Farm Road

Millerton Point Area

- Smaller day use parking area at Tomasini Point
- Hiking-only trails (no mountain bicycling on Millerton Uplands trails)
- No additional staff housing at Millerton Point

Marconi Cove Area

- Smaller day use parking area
- No campground
- No boat launch

This alternative was considered to further reduce natural and cultural impacts from the preferred alternative and from the proposals in Alternative #2 by reducing the number and sizes of proposed facilities, including the proposed sizes of day use facilities on the east side of the bay. Group camping in the Heart's Desire Area, the proposed campground at Marconi Cove, and a potential staff housing site are eliminated. Existing boat launch facilities in the park would not be improved, and no new boat launch

facilities would be built. Mountain bicycling opportunities would not become available in the park.

EVALUATION

Alternative 3 would attain most of the basic project objectives at a greatly reduced level. Implementation of actions and mitigation measures similar to those included in the proposed General Plan would reduce impacts to a less than significant level. There would be less overall negative impacts to natural and cultural resources in Alternative #3 than in either the preferred alternative or in Alternative #2.

This alternative eliminates the potential for mountain bike use on the Millerton Uplands trail, and for increased boating opportunities on the bay. It also eliminates new campgrounds that would ameliorate the lack of this kind of facility regionwide. These eliminations would reduce potential environmental impacts such as soil compaction in concentrated use areas, water quality impacts from soil erosion and recreational use on the bay, increased noise and air quality impacts due to increases in traffic and boating, impacts to wildlife from potential disturbance, and potential traffic congestion in the area. However, it does not respond to the increasing desire for mountain bicycling, boating and camping opportunities in the region that the park could provide.

Due to the magnitude of reductions, this alternative greatly decreases the diversity and range of recreation opportunities park-wide, and is especially lacking in potential recreation facilities for the newly-acquired parcels on the east side of the bay. It does not respond to the need for more places to pull off Highway 1 for rest and recreation.

CUMULATIVE IMPACTS

Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (CEQA Guidelines Section 15355).

Marin County has been updating a countywide general plan that calls for minor increases in housing and commercial development in the vicinity of Tomales Bay, but not to the extent that the character of the region would change dramatically. The National Park Service has a planning effort ongoing for the Point Reyes National Seashore as well. In general, land management agencies in the region recognize the importance of the natural qualities of the area that have been preserved over time, and base their planning and development efforts on the importance of preserving these values into the future. The General Plan recommends that the Department continue to work cooperatively with regional land management agencies to find common management strategies that would enhance and preserve existing natural, cultural, and recreational resource values regionwide.

To the extent that water quality degradation in Tomales Bay and the loss of biological, cultural, and aesthetic resources is occurring in the region any loss, disturbance, or degradation of these resources would contribute to cumulative impacts. In addition, the General Plan proposes limited development of additional recreational facilities.

The facility development proposed in the General Plan may result in impacts to cultural resources, sensitive species, wildlife habitat, water quality, and aesthetic resources. Recommendations have been proposed for reducing these impacts, including the use of an adaptive management process to establish desired standards for park resources based on the overall vision for the park as stated in the General Plan, “indicators” that warn of negative impacts or conditions that are causing resource conditions to move away from the established standards, and management actions to mitigate and minimize impacts to resources. Examples of resource guidelines are found in the Parkwide Goals and Guidelines and the Park Area Management Visions and Guidelines sections; however, future studies and plans will provide more information that will help refine the definitions of resource standards, indicators, and management actions and how they relate to the General Plan vision. For more information regarding the adaptive management process, please see the “Carrying Capacity: The Sustainability of Natural, Cultural, and Recreational Resources, and Visitor Experiences” section of the General Plan.

The state listing of Tomales Bay water quality as “impaired” requires that special attention be paid to potential impacts to the bay and surrounding water bodies. The General Plan proposes extensive mitigation measures to avoid these impacts, including measures that would help bring the bay’s waters into compliance with the San Francisco Bay Regional Water Quality Control Board standards for water quality. Upgrading septic systems in the park, using the best management practices of soil conservation agencies during facilities development and maintenance, reducing concentrated water flows and sediment transport, and development of a park Watershed Management Plan are included in the plan as mitigations for potential impacts to water quality from plan proposals.

The recreation proposals in the General Plan include several that bring visitors, facilities and activities close to the shoreline of Tomales Bay. Potential negative impacts, such as increased potential for erosion into the bay, estuaries and other water bodies, impacts to local oyster farms, traffic congestion, and visual and noise impacts from these proposals have been addressed in the General Plan. Potential mitigations include best management practices for soil erosion and drainage, monitoring of motorboat impacts to natural resources and auditory conditions, enforcement of park noise standards at night in the campgrounds and during the day, and screening of parking lots, roads and other structures with vegetation and/or site grading.

If the staff housing proposal is implemented, there could be a small net reduction of park staff demand on the local housing market, which would help alleviate some of the local housing shortage. If implemented, these proposals would not substantially or adversely impact housing and population growth in the area. No significant population and housing impacts are projected.

In addition, the possible acquisitions and conservation easements discussed in the General Plan may act to protect existing park resources, preserve and enhance viewsheds and aesthetic resources, and enhance plant and wildlife habitat by providing habitat linkages and buffers.

Mitigation will reduce potential cumulative impacts from General Plan proposals to a less than significant level.

EFFECTS FOUND NOT TO BE SIGNIFICANT

As a first tier of planning and environmental analysis, impacts to the following items were found not to be potentially significant. Future implementation of plan proposals will be subject to a more detailed analysis of potential impacts resulting from the specific project during a second-level environmental review.

LAND USE AND PLANNING

The General Plan for Tomales Bay State Park provides guidelines for future land use and development and is consistent with local and regional general plans. The General Plan proposals are consistent with the existing land use in the area, which is a combination of open space, recreational, residential, agriculture, ranching, and commercial.

Future implementation of general plan proposals will be subject to additional tiered environmental review. No significant land use and planning impacts are projected.

MINERAL RESOURCES

The plan will not result in significant impacts to mineral resources. Future implementation of general plan proposals will be subject to additional tiered environmental review. If implemented, this plan would not substantially impact mineral resources.

NOISE

Please see the discussion on potential noise impacts in the Aesthetic Resources section of the “Potentially Significant Environmental Effects” section of the Environmental Analysis.

PUBLIC SERVICES

The proposal would not require significant additional government services for fire protection, police protection, schools, or public facility maintenance.

The plan proposes that circulation improvements be made at the main entrance to the Heart's Desire Area for more efficient fee collection and traffic control. In addition to new

overnight and day use facilities in this area, improved access to park properties and proposed facilities in the North Dream Farm Road area and on the east side of the bay will potentially increase traffic on Sir Francis Drake Boulevard and Highway 1. Significant increased maintenance of these existing public roads is not anticipated with the addition of park road and facility upgrades and additions.

The potential for wildfire in the park and surrounding areas would be increased with the development of General Plan proposals for camping and day use, including trails. The General Plan proposes the development of fire management plans, including a Wildfire Management Plan and a Prescribed Fire Management Program that would address the potential risks of wildfire in the park and propose actions for prevention, pre-suppression and suppression of wildfires. The Department should coordinate with local and regional fire control agencies toward these goals; however, it is not anticipated that the General Plan proposals would require significantly more government services for fire protection.

Future implementation of general plan proposals will be subject to additional tiered environmental review. If implemented, this plan would not have an adverse effect on public services.

RECREATION

The plan proposes increasing recreational resources with development of day use and camping facilities, new interpretive facilities, loop trails, and trail linkages from park trails to local and regional trails outside the park boundaries. The plan also calls for recreational facilities with the maximum appropriate disabled accessibility.

The plan recommends the use of adaptive management processes that would help implement the General Plan's vision and desired conditions for natural, cultural, and recreational resources and visitor experiences in the park. These processes would provide an ongoing method of evaluation and mitigation of impacts to recreational uses, visitor experiences, and park resources, which can affect one another over time. Using the adaptive management process, significant impacts would be minimized to ensure survival of the park's important values and visitor opportunities as expressed in the General Plan.

The plan may restrict some types of recreation in order to minimize resource impacts; however, the plan also proposes the evaluation and potential development of other forms of recreation to respond to visitor demand and to provide increased opportunities for interpretation and education.

The project calls for the development of a Roads and Trails Management Plan that would evaluate the need, location, use, and development of existing and future roads and trails and associated facilities. This management plan may propose discontinuing the use of specific roads and trails due to severe erosion or disturbance to sensitive wildlife habitat.

The plan may increase the use of existing regional parks by encouraging trail connections; however this increased use would not be substantial or cause or accelerate significant physical deterioration of the facility.

Any future projects will be subject to additional environmental review. There will not be significant adverse impacts to recreational resources resulting from the implementation of this plan.

TRANSPORTATION/TRAFFIC

There will not be significant adverse impacts to transportation, traffic or circulation as a result of implementation of this General Plan.

With expanded facilities, increasing population growth in the state and region, and subsequent increasing demand for recreational opportunities, the park will likely experience increased visitation over the coming decades. Improvements in directional and informational signage should make travelers aware of the park and its location and may result in increased visitation. Most of the visitors will arrive by private vehicle, with some arriving by bus, although some may take advantage of the proposed California Coastal Trail and public transit connections.

The plan proposes road, trail, and parking improvements that will enhance circulation in the park. The plan proposes that circulation improvements be made at the main entrance to the Heart's Desire Area for more efficient fee collection and traffic control. In addition to new overnight and day use facilities in this area, improved access to park properties and proposed facilities in the North Dream Farm Road area and on the east side of the bay will potentially increase traffic on Sir Francis Drake Boulevard and Highway 1.

The development of day use facilities on the east side of Tomales Bay will increase vehicle traffic on Highway 1 and in the region, although it is not anticipated to add a significant amount of traffic. If potential motorboat launching from Marconi Cove is found to increase traffic circulation impacts, the Department will evaluate this potential activity at Marconi Cove and take actions to minimize impacts, such as limit the number of boat launches per day, or discontinue the activity, if appropriate.

Existing traffic levels on Highway 1 and Sir Francis Drake Blvd. will not be substantially affected by the plan proposals as it is projected that traffic increases due to plan proposals will be minimal on these access roads. The two primary new facilities proposed for the Heart's Desire Area are the 15-site (maximum) campground in the current maintenance storage area and the conversion of the now unused "Hike-and-Bike" campground to a group campground. It is estimated that these two new facilities would generate 50-60 new round-trips per day along Sir Francis Drake Blvd. The proposed facilities at Marconi Cove and the proposed public hiking access to the Millerton Uplands would potentially generate 75-150 new round-trips per day along Highway 1.

These minimal increases in daily vehicle traffic will be a very small fraction of the traffic that exists now on these roads. The current vehicle service levels on Highway 1 and Sir Francis Drake Blvd. are well within moderate traffic levels defined as having reasonably steady, high-volume flows of traffic as indicated by the National Research Council's Highway Capacity Manual (2000). Visitation to Point Reyes National Seashore is projected to be 2.9 million by 2010. Marin County's *Bus Transit Futures Final Report* states that the Point Reyes National Seashore's "future ability to accommodate visitors will be constrained by parking management policies, not external access routes." Tomales Bay State Park and Point Reyes National Seashore share the same access routes. The small percentage of traffic contributed by existing and proposed facilities of Tomales Bay State Park should not create significant impacts to regional roadways. The Department will monitor traffic impacts and park visitor access experiences in the region through the adaptive management process and propose management actions to minimize impacts from traffic increases in the park and on surrounding roadways, if appropriate.

The plan recommends that the Department coordinate with Caltrans and Marin County to assure that alterations and maintenance of roadways and signage will result in safe and enjoyable driving experiences in and around the park. In addition, the plan strongly recommends that the Department work with other transportation agencies to develop and promote alternative modes of transportation to, from, and within the park, including pedestrian, bicycle, bus, shuttle, and boat, and to pursue shared parking arrangements with the National Park Service and Marin County.

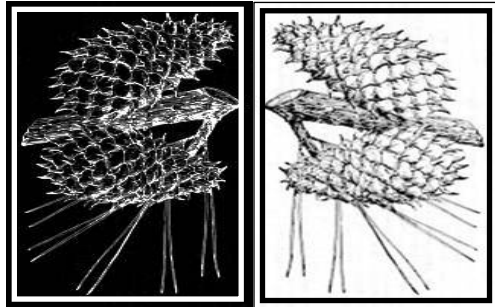
The Department will develop a comprehensive Roads and Trails Management Plan to guide the location, use, and maintenance of existing and future roads and trails within park boundaries. More detailed potential impacts of any proposed roads and trails will be evaluated.

Future implementation of general plan proposals will be subject to additional tiered environmental review. If implemented, this plan would not substantially impact traffic and circulation resources.

UTILITIES AND SERVICE SYSTEMS

The project recommends new facility development (including trails, day use and campground areas, and interpretive facilities) that will require additional utilities and service systems. The increase required will be minimal. New water and sewer systems will be supplied by existing Department utility systems and any new drainage systems will comply with all applicable regulations and policies with regard to water quality. Future implementation of general plan proposals will be subject to additional tiered environmental review. If implemented, the project will not result in a need for substantial increases or alterations in utilities and service systems.

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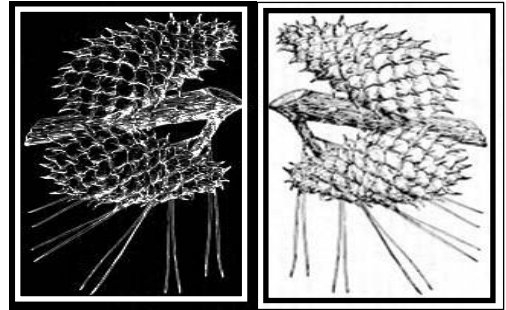
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APPENDICES



APPENDIX A: SUMMARY OF PUBLIC SCOPING MEETING COMMENTS

Number of Comments: 87 Number of Respondents: 24

Resource and Viewshed Protection	# Comments
Keep park's quiet refuge character (Heart's Desire Area)	5
Protect viewsheds-keep facilities minimal and hidden	3
Remove exotic plants	3
Keep Millerton and Tomasini Points natural	2
Protect Bishop pines	2
No dogs on trails to protect wildlife	2
Supports dog walking at Millerton Point	1
Protect native plants	1
Protect water quality of Tomales Bay	1
Supports restoration of Heart's Desire Creek outlet	1
Supports leaving North Marshall Area natural	1
Recreation	
Supports mountain biking on trails	12
Supports hike/bike camping	11
Opposes RV camping	7
Supports trail connections	4
Supports group camping	4
Opposes encouraging kayak use on bay	3
Supports car camping	2
Opposes car camping	2
Supports boat camping	2
Opposes group camping	1
Wants RV camping	1
Keep parking for Millerton Uplands at existing bayside parking lot	1
Opposes equestrian use in Inverness Area	1
Supports multi-use group and family picnic area at Heart's Desire	1
Develop Marconi Cove for day-use only & boat launching	1
Supports "Waterdogs" classes & Dance Palace Camp use	1
Limit boat launching at Marconi Cove to cartop boats	1
Operations and Security	
Support staff housing	2
Concern with ability to staff/monitor new facilities and activities	3
Supports consideration of wildfire danger in planning	1
Supports consolidation of public ownership on Inverness Ridge	1
Supports removal of N. Dream Farm Rd. structures and trailers	1
Inter-agency Coordination	
Supports inter-agency efforts to deal with boating issues	1
Interpretation	
Establish small museum area in ranger station	1

APPENDIX B: EXISTING FACILITIES AT TOMALES BAY STATE PARK

Facility	Area	Description	ADA Access	# Picnic Tables	# BBQ Pits	# Parking Spaces (215)	Comments
Headquarters Building	Heart's Desire (HD)	Admin.	No	0	0	6	Fee Collection, Ranger office, Information
Bone yard	HD	Maintenance	No	0	0	0	Well, water pump and water storage tank
Maintenance Facility	HD	Maintenance	No	0	0	10	Fuel station, equipment storage
Maintenance Trailer Pad	HD	Residence	No	0	0	0	Located in Maintenance area
Heart's Desire Residence 1	HD	Residence	No	0	0	2	
Heart's Desire Residence 2	HD	Residence	No	0	0	3	
Heart's Desire Trailer Pad	HD	Residence	No	0	0	0	Located Near HD Residence 1
Indian Beach	HD	Beach	No	0	0	0	Overnight education, 1/2 mile hike from HD Parking
Heart's Desire Beach	HD	Beach	Yes	17	10	64	Bulletin boards Picnic Facilities
Picnic Area Hike/Bike	HD	Day Use	No	45	15	80	6 former hike/bike camp sites, 6 food lockers
Pebble Beach	HD	Beach	No	0	0	0	1/2 mile hike from Heart's Desire Parking
Shell Beach 1	HD	Beach	No	0	0	15	1/4 mile hike from Shell Beach Parking
Shell Beach 2	HD	Beach	No	0	0	0	1/4 mile hike from Shell Beach Parking
Jepson Trail	HD	Trail	No	N/A	N/A	N/A	Hiking
Johnstone Trail	HD	Trail	No	N/A	N/A	N/A	Hiking
Indian Beach Trail	HD	Trail	No	N/A	N/A	N/A	Interpretive signage
Dream Farm Residence	Inverness	Residence	No	0	0	2	Residence currently abandoned
Dream Farm Trailer 1	Inverness	Residence	No	0	0	0	Abandoned
Dream Farm Trailer 2	Inverness	Residence	No	0	0	0	Abandoned
Millerton Pull-out	Millerton	Day use	No	3	0	30	Unofficial trail Loop, Picnic tables
Millerton Residence	Millerton	Residence	No	0	0	3	
Marconi Cove	Marconi	Day Use	No	0	0	0	Boat ramp and abandoned building

APPENDIX C: WEST MARIN RECREATION FACILITIES SUMMARY

FACILITY	TYPE	LOCATION	OWNER	ACRES	CAMP-GROUNDS	BACK-PACK ONLY SITES	HIKE/BIKE SITES	WALK-IN SITES (less than 800' walk)	CAR SITES	GROUP SITES	BOAT -IN SITES	HORSE SITES	ADA SITES	RV COM-PATIBLE SITES	TOTAL CAMP-SITES	CABINS	LODGES (# OF ROOMS OR BEDS)	TRAILS/FIRE ROADS (MILES)	PICNIC FACIL-ITIES	GROUP PICNIC SITES
Point Reyes National Seashore	Public	W Marin Co.	NPS	65083	5	0	45	0	0	6	20	All but Glen	0	0	71	0	44	140	Yes	1
Golden Gate National Recreation Area	Public	SW Marin Co.	NPS	30949	4	8	0	7	0	0	0	0	0	0	15	0	0	70	Yes	2
Muir Woods National Monument	Public	SW Marin Co.	NPS	522	0	0	0	0	0	0	0	0	0	0	0	0	0	6	No	0
Tomales Bay State Park	Public	West Marin Co.	CSP	2224	0	0	0	0	0	0	0	0	0	0	0	0	0	5.6	Yes	0
Samuel P. Taylor State Park	Public	West Marin Co.	CSP	2707	4	0	4	0	61	4	0	1	6	0	70	0	0	45	Yes	2
Mt. Tamalpais	Public	West Marin Co.	CSP	6243	4	0	1	31	0	2	0	1	0	0	35	9	0	60	Yes	1
Marconi Conference Center	Restricted Public Access	Marconi	CSP	48	0	0	0	0	0	0	0	0	0	0	0	0	40	0	Yes	1
Marin Municipal Water District	Restricted Public Access	SW Marin Co.	MMWD	18872	0	0	0	0	0	0	0	0	0	0	0	0	0	130	Yes	0
Gary Giacomini Open Space Preserve	Public	SW Marin Co.	MOSD	1507	0	0	0	0	0	0	0	0	0	0	0	0	0	12.2	No	0
White Hill Open Space Preserve	Public	SW Marin Co.	MOSD	358	0	0	0	0	0	0	0	0	0	0	0	0	0	4.2	No	0
Cascade Open Space Preserve	Public	SW Marin Co.	MOSD	539	0	0	0	0	0	0	0	0	0	0	0	0	0	9.7	No	0
Baltimore Canyon Open Space Preserve	Public	SW Marin Co.	MOSD	203	0	0	0	0	0	0	0	0	0	0	0	0	0	5	No	0
Blithedale Summit Open Space Preserve	Public	SW Marin Co.	MOSD	585	0	0	0	0	0	0	0	0	0	0	0	0	0	9.2	No	0
King Mountain Open Space Preserve	Public	SW Marin Co.	MOSD	112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No	0
Roy's Redwoods Open Space Preserve	Public	SW Marin Co.	MOSD	305	0	0	0	0	0	0	0	0	0	0	0	0	0	8.5	No	0
French Ranch Open Space Preserve	Public	SW Marin Co.	MOSD	355	0	0	0	0	0	0	0	0	0	0	0	0	0	5.2	No	0
Maurice Thorner Open Space Preserve	Public	SW Marin Co.	MOSD	30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	No	0
Loma Alta Open Space Preserve	Public	SW Marin Co.	MOSD	467	0	0	0	0	0	0	0	0	0	0	0	0	0	5.8	No	0
Camino Alta Open Space Preserve	Public	SW Marin Co.	MOSD	169	0	0	0	0	0	0	0	0	0	0	0	0	0	3	No	0
Bald Hill Open Space Preserve	Public	SW Marin Co.	MOSD	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No	0
Agate Beach	Public	Bolinas	MOSD	6.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	No	0
Bolinas Park	Public	Bolinas	MOSD	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No	0
Whitehouse Pool Park	Public	West of Point Reyes Station	MOSD	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	No	0
Deer Park	Public	Fairfax	MOSD	54	0	0	0	0	0	0	0				0			0.75	Yes	0
Miller Park Boat Launch	Public	3 miles north of Marshall	MOSD	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Yes	0
Tomales Bay Ecological Reserve	Restricted Public Access	West Marin Co.	California State Lands Comm.	442	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No	0
Audubon Canyon Ranch, Bolinas Lagoon Preserve	Restricted Public Access	Bolinas	Audubon Canyon Ranch	1020	0	0	0	0	0	0	0	0	0	0	0	0	0	9	No	0
Audubon Canyon Ranch, Cypress Grove Preserve	Restricted Public Access	North of Marshall	Audubon Canyon Ranch	500	0	0	0	0	0	0	0	0	0	0	0	0	0	2	No	0
Lawson's Resort	Private	Dillon Beach	Lawson's Resort	N/A	1	0	0	0	0	1	0	0	0	900	901	3	0	0	Yes	1
Olema Ranch Campground	Private	Olema	Olema Ranch	N/A	1	0	0	0	175	0	0	0		99	274	0	0	0	No	0
Five Brooks Ranch	Private	Olema	Five Brooks Rnch	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No	0
Camp Tamarancho	Private	West Marin Co.	Boy Scouts of America	N/A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	No	0
Tamal Saka Kayaking	Private	Marshall	Tamal Saka	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No	0
Blue Waters Kayaking	Private	Inverness	Blue Waters Kayaking	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	No	0
			TOTALS	133360	20	8	50	38	236	13	20	2	6	999	1366	12	84	533		8

APPENDIX D: TOMALES BAY BEACHES AND ACCESS AREAS

Access Area	Location	Accessed Via	Ownership	Type	Boat Launch	Shore	Night Parking	Camp-ing	Rest-room
Tomales Beach	Point Reyes NS	Tomales Bay Only	Public	Beach	No	West	No	Yes	0
Rope Swing Beach	Point Reyes NS	Tomales Bay Only	Public	Beach	No	West	No	Yes	0
Blue Gum Beach	Point Reyes NS	Tomales Bay Only	Public	Beach	No	West	No	Yes	0
Avalis Beach	Point Reyes NS	Tomales Bay Only	Public	Beach	No	West	No	Yes	0
Kilkenny Beach	Point Reyes NS	Tomales Bay Only	Public	Beach	No	West	No	Yes	0
Marshall Beach	Point Reyes NS	L Ranch Road	Public	Beach	No	West	No	Yes	0
Heart's Desire Beach	Tomales Bay SP	Heart's Desire parking Jepson Trail parking	Public	Beach	Car Top	West	No	No	1
Indian Beach	Tomales Bay SP	Heart's Desire parking	Public	Beach	No	West	No	No	1
Pebble Beach	Tomales Bay SP	Heart's Desire parking Jepson Trail parking	Public	Beach	No	West	No	No	1
Shell Beach 1	Tomales Bay SP	Shell Beach parking Jepson Trail parking	Public	Beach	No	West	No	No	1
Shell Beach 2	Tomales Bay SP	Shell Beach parking Jepson Trail parking	Public	Beach	No	West	No	No	1
Millerton Point	Tomales Bay SP	Millerton Point parking	Public	Beach	No	East	No	No	1
Marconi Cove	Tomales Bay SP	Marconi Cove parking (not currently open)	Public	Ramp	Trailer	East	No	No	0
White House Pool	W. of PR Station	White House parking	Public	Beach	Car Top	West	No	No	1
Chicken Ranch Beach	Inverness	Chicken Ranch Beach parking lot	Public	Beach	Car Top	West	No	No	1
Miller County Park	Miller City Park	Miller Park parking	Public	Ramp	Trailer	East	Yes	No	1
Lawson's Landing	Dillon Beach	Lawson's Lndg parking	Private	Ramp	Trailer	East	Yes	Yes	1
Golden Hinde Motel	Inverness	Golden Hinde parking	Private	Ramp	Trailer	West	Yes	No	1
Tamal Saka Kayaks	Marshall	Tamal Saka parking	Private	Beach	Car Top	West	Yes	No	1
Blue Water Kayak	Inverness	Blue Water parking	Private	Beach	Car Top	West	Yes	No	1

APPENDIX E: UTILITIES AT TOMALES BAY STATE PARK

FACILITY	PARCEL	LPG	PHONE	PAY PHONE	RESTROOM	RR TYPE	WATER	POWER
Headquarters Building	Heart's Desire	Yes	Yes	1	Yes	Septic	Yes	Yes
Boneyard	Heart's Desire	No	No	0	No	N/A	Yes	Yes
Maintenance Facility	Heart's Desire	Yes	Yes	0	Yes	Septic	Yes	Yes
Maintenance Trailer Pad	Heart's Desire	No	No	0	Yes	Septic	Yes	Yes
HD Residence 1	Heart's Desire	Yes	Yes	0	Yes	Septic	Yes	Yes
HD Residence 2	Heart's Desire	Yes	Yes	0	Yes	Septic	Yes	Yes
HD Trailer Pad	Heart's Desire	Yes	Yes	0	Yes	Septic	Yes	Yes
Indian Beach	Heart's Desire	No	No	0	Yes	Pit	Yes	No
Heart's Desire Beach	Heart's Desire	Yes	No	0	Yes	Septic	Yes	No
Picnic Area Hike/Bike	Heart's Desire	Yes	No	0	Yes	Septic	Yes	No
Pebble Beach	Heart's Desire	No	No	0	Yes	Pit	No	No
Shell Beach 1	Heart's Desire	No	No	0	Yes	Pit	No	No
Shell Beach 2	Heart's Desire	No	No	0	Yes	Pit	No	No
Jepson Trail	Heart's Desire	No	No	0	No	N/A	No	No
Johnstone Trail	Heart's Desire	No	No	0	No	N/A	No	No
Indian Beach Trail	Heart's Desire	No	No	0	No	N/A	No	No
Dream Farm Residence	Inverness	No	Yes	0	Yes	Septic	Yes	Yes
Dream Farm Trailer 1	Inverness	No	No	0	No	N/A	No	No
Dream Farm Trailer 2	Inverness	No	No	0	No	N/A	No	No
Millerton Pull-out	Millerton	No	No	0	Yes	Pit	No	No
Millerton Residence	Millerton	Yes	Yes	0	Yes	Septic	Yes	Yes
Marconi Cove	Marconi	No	No	0	No	N/A	Yes	Yes

APPENDIX F: PLANT COMMUNITY CLASSIFICATIONS CROSSWALK		
SAWYER & KEELER-WOLF	HOLLAND	WHR
Arroyo willow alliance	Central coast arroyo willow riparian forest	Freshwater emergent wetland
Bishop pine alliance	Closed-cone coniferous forest	Closed pine-cypress
Blue blossom alliance	Blue brush chaparral	Mixed chaparral
California annual grassland weedy alliance	Non-native grassland	Annual grassland
California annual grasslands with native component	Non-native grassland	Annual grassland
California bay alliance	California bay forest	Coastal oak woodland
California wax myrtle alliance	none	Coastal oak woodland
Coast live oak alliance	Coast live oak woodland	Coastal oak woodland
Cordgrass alliance	Northern coastal salt marsh	Saline emergent wetland
Coyote brush alliance	Central Lucian coastal scrub	Coastal scrub
Douglas fir alliance	Coast range mixed conifer forest	Douglas-fir
Dunes	Active coastal dunes	Coastal dunes
Eucalyptus spp. Alliance	Eucalyptus	Eucalyptus
Introduced perennial grassland	Coastal terrace prairie	Perennial grassland
Mixed manzanita mapping unit	Chaparral	Mixed chaparral
Pacific reedgrass alliance	Coastal terrace prairie	Perennial grassland
Pickleweed alliance	Northern coastal salt marsh	Saline emergent wetland
Red alder alliance	Red alder riparian forest	Montane riparian
Rush alliance	Freshwater seep	Fresh emergent wetland
Saltgrass alliance	Northern coastal salt marsh	Saline emergent wetland
Willow mapping unit	Willow riparian	Riparian

APPENDIX G: SENSITIVE PLANT SPECIES AND COMMUNITIES KNOWN TO OCCUR WITHIN TOMALES BAY STATE PARK

PLANT SPECIES	COMMON NAME	LIST STATUS* (CNPS/State/Federal)
<i>Arctostaphylos virgata</i>	Marin manzanita	1B/none/none
<i>Campanula californica</i>	swamp harebell	1B/none/SOC
<i>Carex lyngbyei</i>	Lyngbye's sedge	2/none/none
<i>Ceanothus gloriosus var. gloriosus</i>	Point Reyes ceanothus	4/none/none
<i>Ceanothus gloriosus var. porrectus</i>	Mount Vision ceanothus	1B/none/SOC
<i>Cordylanthus maritimus ssp. palustris</i>	Point Reyes bird's-beak	1B/none/SOC
<i>Elymus californicus</i>	California bottlebrush grass	4/none/none
<i>Fritillaria affinis var. tristulis</i>	Marin checker lily	1B/none/none
<i>Fritillaria liliacea</i>	fragrant fritillary	1B/none/SOC
<i>Gilia millefoliata</i>	dark-eyed gilia	1B/none/none
<i>Grindelia hirsutula var. maritima</i>	San Francisco gumplant	1B/none/SOC
<i>Grindelia stricta var. platyphylla</i>	gumweed	4/none/none
<i>Microseris paludosa</i>	marsh microseris	1B/none/none
<i>Polygonum marinense</i>	Marin knotweed	3/none/SOC
<i>Ribes victoris</i>	Victor's gooseberry	4/none/none

SENSITIVE PLANT COMMUNITIES KNOWN TO OCCUR IN PARK

Coastal Terrace Prairie

Northern Coastal Salt Marsh

* California Native Plant Society Ranks: List 1A = Presumed extinct in California; List 1B = Rare or Endangered in California and Elsewhere; List 2 = Rare or Endangered in California, more common elsewhere; List 3 = Plants for which we need more information (a review list); List 4 = Plants of limited distribution (a watch list). State ranks: CR = California (State) Rare; CE = California (State) Endangered; SOC = Species of Concern. Federal ranks: FE= Federal Endangered; SOC = Species of Concern.

APPENDIX H: SENSITIVE PLANT SPECIES AND COMMUNITIES POTENTIALLY OCCURRING WITHIN TOMALES BAY STATE PARK

SENSITIVE PLANT SPECIES FOR WHICH SUITABLE HABITAT EXISTS IN PARK	LIST STATUS (CNPS/State/Fed)
<i>Abronia umbellata ssp. breviflora</i>	1B/none/SOC
<i>Agrostis blasdalei</i>	1B/none/ SOC
<i>Alopecurus aequalis var. sonomensis</i>	1B/none/FE
<i>Amsinckia lunaris</i>	1B/none/none
<i>Astragalus pycnostachyus var. pycnostachyus</i>	1B/none/none
<i>Blennosperma nanum var. robustum</i>	1B/CR/SOC
<i>Calamagrostis crassiglumis</i>	2/none/SOC
<i>Calystegia purpurata ssp. saxicola</i>	1B/none/none
<i>Carex leptalea</i>	2/none/none
<i>Castilleja ambigua ssp. humboldtiensis</i>	1B/none/SOC
<i>Ceanothus masonii</i>	1B/CR/SOC
<i>Chorizanthe cuspidata var. cuspidata</i>	1B/none/SOC
<i>Chorizanthe cuspidata var. villosa</i>	1B/none/none
<i>Chorizanthe valida</i>	1B/CE/FE
<i>Cirsium andrewsii</i>	1B/none/none
<i>Clarkia concinna ssp. raichei</i>	1B/none/SOC
<i>Delphinium bakeri</i>	1B/CR/FE
<i>Delphinium luteum</i>	1B/CR/FE
<i>Dirca occidentalis</i>	1B/none/none
<i>Erigeron supplex</i>	1B/none/SOC
<i>Gilia capitata ssp. chamissonis</i>	1B/none/none
<i>Gilia capitata ssp. tomentosa</i>	1B/none/none
<i>Hemizonia congesta ssp. leucocephala</i>	3/none/none
<i>Hesperevax sparsiflora var. brevifolia</i>	2/none/none
<i>Horkelia cuneata ssp. sericea</i>	1B/none/SOC
<i>Horkelia marinensis</i>	1B/none/SOC
<i>Lasthenia macrantha ssp. macrantha</i>	1B/none/none
<i>Layia carnosa</i>	1B/CE/FE
<i>Lessingia hololeuca</i>	3/none/none
<i>Lilium maritimum</i>	1B/none/SOC
<i>Limnanthes douglasii ssp. sulphurea</i>	1B/CE/SOC
<i>Lupinus tidestromii</i>	1B/CE/FE
<i>Phacelia insularis var. continentis</i>	1B/none/SOC

SENSITIVE PLANT SPECIES FOR WHICH SUITABLE HABITAT EXISTS IN PARK (continued)	LIST STATUS (CNPS/State/Fed) (continued)
<i>Piperia elegans ssp. decurtata</i>	1B/none/none
<i>Rhynchospora californica</i>	1B/none/SOC
<i>Sidalcea calycosa ssp. rhizomata</i>	1B/none/none
<i>Sidalcea hickmanii ssp. viridis</i>	1B/none/SOC
<i>Trifolium amoenum</i>	1B/none/FE
<i>Triphysaria floribunda</i>	1B/none/SOC
SENSITIVE PLANT COMMUNITIES FOR WHICH SUITABLE HABITAT EXISTS IN PARK	
<i>Central Dune Scrub</i>	
<i>Coastal and Valley Freshwater Marsh</i>	
<i>Northern Maritime Chaparral</i>	
<i>Northern Vernal Pool</i>	
CALIFORNIA NATIVE PLANT SOCIETY (CNPS) RANKS	
<p>List 1A = Presumed extinct in California List 1B = Rare or Endangered in California and elsewhere List 2 = Rare or Endangered in California, more common elsewhere List 3 = Plants for which we need more information - REVIEW LIST List 4 = Plants of limited distribution - WATCH LIST STATE RANK CODES: CR = California (State-listed) Rare CE = California (State-listed) Endangered SOC = Species of Concern FEDERAL RANK CODES: FE = Federal Endangered; SOC = Species of Concern</p>	

APPENDIX I: NON-NATIVE PLANT SPECIES KNOWN TO OCCUR WITHIN TOMALES BAY STATE PARK

SPECIES	COMMON NAME	CALIPC CATEGORY*
<i>Acacia decurrens</i>	green wattle	need more information
<i>Acacia verticillata</i>	star acacia	none
<i>Agave sp.</i>	century plant	none
<i>Agrostis viridis</i>	bentgrass	none
<i>Aira caryophyllea</i>	hairgrass	none
<i>Anagallis arvensis</i>	scarlet pimpernel	none
<i>Avena barbata</i>	slim oat	annual grasses
<i>Avena sativa</i>	cultivated oat	none
<i>Bellis perennis</i>	English daisy	none
<i>Brassica nigra</i>	black mustard	List B
<i>Brassica rapa</i>	field mustard	none
<i>Briza maxima</i>	rattlesnake grass	none
<i>Briza minor</i>	baby rattlesnake grass	none
<i>Bromus diandrus</i>	ripgut grass	annual grasses
<i>Bromus hordeaceus</i>	soft chess	none
<i>Bromus madritensis ssp. madritensis</i>	madrid brome	none
<i>Bromus sterilis</i>	poverty brome	none
<i>Brunsvigia rosea</i>	naked ladies	none
<i>Cakile maritima</i>	sea rocket	none
<i>Caprobrotus chilensis</i>	sea fig	considered, but not listed
<i>Caprobrotus edulis</i>	hottentot fig	List A-1
<i>Capsella bursa-pastoris</i>	shepard's purse	none
<i>Carduus pycnocephalus</i>	Italian thistle	List B
<i>Castanea sativa</i>	Spanish chestnut	none
<i>Centaurea melitensis</i>	napa thistle, tocalote	List B
<i>Cerastium glomeratum</i>	mouse-ear chickweed	none
<i>Chamomilla suaveolens</i>	pineapple weed	none
<i>Cirsium vulgare</i>	bull thistle	List B
<i>Conium maculatum</i>	poison hemlock	List B
<i>Conyza canadensis</i>	horseweed	none
<i>Cotula coronopifolia</i>	brass buttons	none
<i>Cupressus macrocarpa</i>	Monterey cypress	need more information
<i>Cynosurus echinatus</i>	dogtail	None
<i>Cyperus involucratus</i>	umbrella plant	none
<i>Cytisus scoparius</i>	Scotch broom	List A-1

SPECIES	COMMON NAME	CALIPC CATEGORY*
<i>Dactylis glomerata</i>	orchard grass	none
<i>Delairea odorata</i>	cape ivy	List A-1
<i>Digitalis purpurea</i>	foxglove	considered, but not listed
<i>Dipsacus sativus</i>	teasel	considered, but not listed
<i>Erechtites glomerata</i>	Australian fireweed	List B
<i>Erechtites minima</i>	Australian fireweed	List B
<i>Erodium botrys</i>	broad-leaved filaree	none
<i>Erodium cicutarium</i>	red-stemmed filaree	none
<i>Erodium moschatum</i>	white-stemmed filaree	none
<i>Eucalyptus globulus</i>	blue gum	List A-1
<i>Euphorbia peplus</i>	petty spurge	none
<i>Festuca arundinacea</i>	alta fescue	List B
<i>Festuca pratensis</i>	meadow fescue	none
<i>Galium aparine</i>	goose grass	none
<i>Genista monspessulana</i>	French broom	List A-1
<i>Geranium dissectum</i>	cut-leaf cranesbill	none
<i>Geranium molle</i>	soft cranesbill	none
<i>Gnaphalium luteo-album</i>	annual cudweed	none
<i>Gunnera tinctoria</i>		none
<i>Hainardia cylindrica</i>	rat tail grass	none
<i>Hirschfeldia incana</i>	summer mustard	need more information
<i>Holcus lanatus</i>	velvet grass	List B
<i>Hordeum marinum ssp. gussoneanum</i>	Mediterranean barley	none
<i>Hordeum murinum ssp. leporinum</i>	farmer's foxtail	none
<i>Hypochaeris glabra</i>	smooth cat's-ear	none
<i>Hypochaeris radicata</i>	rough cat's-ear	need more information
<i>Ilex aquifolium</i>	English holly	List B
<i>Knopfia uvaria</i>	red-hot poker	none
<i>Leontodon taraxacoides ssp. taraxacoides</i>	hawkbit	none
<i>Linum bienne</i>	flax	none
<i>Lolium multiflorum</i>	ryegrass	annual grasses
<i>Lolium perenne</i>	perennial ryegrass	none
<i>Lotus corniculatus</i>	bird's foot trefoil	none
<i>Lythrum hyssopifolium</i>	purple loosestrife	none
<i>Madia sativa</i>	coast tarweed	None

SPECIES	COMMON NAME	CALIPC CATEGORY*
<i>Malva nicaeensis</i>	bull mallow	none
<i>Medicago arabica</i>	spotted medick	none
<i>Medicago polymorpha</i>	bur clover	considered, but not listed
<i>Melilotus indica</i>	sweet clover	none
<i>Mentha pulegium</i>	European pennyroyal	List A-2
<i>Myosotis latifolia</i>	forget-me-not	none
<i>Narcissus sp.</i>	daffodil	none
<i>Opuntia basilaris</i>	beavertail cactus	none
<i>Parapholis incurva</i>	sickle grass	none
<i>Paspalum dilatatum</i>	dallis grass	none
<i>Phalaris aquatica</i>	harding grass	List B
<i>Picris echioides</i>	oxtongue	considered, but not listed
<i>Pinus radiata</i>	Monterey pine	need more information
<i>Plantago lanceolata</i>	ribwort	none
<i>Plantago major</i>	common plantain	none
<i>Poa annua</i>	annual bluegrass	none
<i>Polygonum arenastrum</i>	dooryard knotweed	none
<i>Polygonum persicaria</i>	lady's thumb	none
<i>Polypogon monspeliensis</i>	rabbitfoot grass	none
<i>Prunus sp.</i>		none
<i>Ranunculus muricatus</i>	prickle-fruit buttercup	none
<i>Raphanus sativus</i>	radish	none
<i>Raphanus sativus x R. raphanistrum</i>	radish	none
<i>Romulea rosea var. australis</i>		none
<i>Rubus discolor</i>	Himalayan blackberry	List A-1
<i>Rumex acetosella</i>	sheep sorrel	none
<i>Rumex conglomeratus</i>		none
<i>Rumex crispus</i>	curly dock	none
<i>Saline gallica</i>	windmill pink	none
<i>Scandix pecten-veneris</i>	shepard's needle	none
<i>Senecio vulgaris</i>	common groundsel	none
<i>Sequoia sempervirens</i>	coast redwood	none
<i>Sherardia arvensis</i>	field madder	none
<i>Silybum marianum</i>	milk thistle	considered, but not listed
<i>Sinapis arvensis</i>	charlock	none
<i>Sisymbrium officinale</i>	hedge mustard	none
<i>Solanum americanum</i>	black nightshade	none

SPECIES	COMMON NAME	CALIPC CATEGORY*
<i>Soliva sessilis</i>		none
<i>Sonchus asper</i>	sow thistle	none
<i>Sonchus oleraceus</i>	sow thistle	none
<i>Spergula arvensis ssp. arvensis</i>	spurrey	none
<i>Spergularia rubra</i>	sand spurrey	none
<i>Stellaria media</i>	chickweed	none
<i>Tamarix sp.</i>	tamarisk	none
<i>Taraxacum officinale</i>	dandelion	none
<i>Tetragonia tetragonioides</i>	New Zealand spinach	none
<i>Trifolium dubium</i>	shamrock	none
<i>Trifolium hirtum</i>	rose clover	none
<i>Trifolium repens</i>	white clover	none
<i>Trifolium subterraneum</i>	subterranean clover	none
<i>Veronica arvensis</i>	speedwell	none
<i>Vicia sativa ssp. nigra</i>	vetch	none
<i>Vicia sativa ssp. sativa</i>	vetch	none
<i>Vinca major</i>	periwinkle	List B
<i>Vulpia bromoides</i>	fescue	none
<i>Vulpia myuros var. myuros</i>	fescue	none

* California Invasive Plant Council (CalIPC) Category Definitions (from October, 1999 list):
List A = most invasive wildland pest plants. Documented as aggressive invaders that displace natives and disrupt natural habitats. Includes two sub-lists:
List A-1 = widespread pests that are invasive in more than 3 regions identified in The Jepson Manual: Higher Plants of California (Hickman, J., ed., 1993)
List A-2 = regional pests invasive in 3 or fewer regions identified in the Jepson Manual
List B = wildland pest plants of lesser invasiveness. Invasive pest plants that spread less rapidly and cause a lesser degree of habitat disruption. May be widespread or regional.
Red Alert = pest plants with potential to spread explosively. Infestations currently small or localized. If found, alert CalIPC, County Agricultural Commissioner, or California Dept. of Food and Agriculture.
Need More Information = plants for which current information does not adequately describe nature of the threat to wildlands, distribution or invasiveness. More information requested from informed observers.
Annual Grasses = a preliminary list of annual grasses, abundant and widespread in California, that pose major threats to wildlands. Information is requested to support further definition of this category.
Considered, But Not Listed = plants that, after review of status, do not appear to pose a major threat.

**APPENDIX J: SENSITIVE WILDLIFE SPECIES OCCURRING IN (OR FOR WHICH POTENTIAL HABITAT EXISTS IN)
TOMALES BAY STATE PARK**

TYPE	COMMON NAME	SPECIES NAME	STATUS	PROBABILITY IN TBSP
INVERTEBRATES	California brackishwater snail	<i>Tryonia imitator</i>	Local concern	Possible
	Tomales isopod	<i>Caecidotea tomalensis</i>	Local concern	Possible
	California freshwater shrimp	<i>Syncaris pacifica</i>	FE, SE	Possible
	Monarch butterfly (Winter roosts)	<i>Danaus plexippus</i>	Local concern	Possible
	Myrtle's silverspot	<i>Speyeria zerene myrtleae</i>	FE	Possible
FISHES	Coho salmon	<i>Onchorynchus kisutch</i>	FT, SE	Possible
	Steelhead trout	<i>Onchorynchus mykiss</i>	FT	Probable
	Tomales roach	<i>Lavinia symmetricus</i>	CSC	Possible
	Tidewater goby	<i>Eucyclogobius newberryi</i>	FE, CSC	Present
AMPHIBIANS	California red-legged frog	<i>Rana aurora draytonii</i>	FT, CSC	Present
	Foothill yellow-legged frog	<i>Rana boylei</i>	FSC, CSC	Present
REPTILES	Northwestern pond turtle	<i>Clemmys marmorata marmorata</i>	FSC, CSC	Present
BIRDS	Common loon	* <i>Gavia immer</i>	FSC, CSC	Present
	American white pelican	* <i>Pelecanus erythrorhynchos</i>	CSC	Present
	Brown pelican	* <i>Pelecanus occidentalis californicus</i>	FE, SE	Present
	Double-crested cormorant	* <i>Phalacrocorax auritus</i>	CSC	Present
	Great blue heron	* <i>Ardea herodias</i>	Local concern	Present
	American bittern	<i>Botaurus lentiginosus</i>	FSC	Possible
	Snowy egret	* <i>Egretta thula</i>	FSC	Present
	Black-crowned night heron	* <i>Nycticorax nycticorax</i>	Local concern	Possible

BIRDS (cont'd)	White-faced ibis	<i>*Plegadis chihi</i>	FSC, CSC	Possible
	Canvasback	<i>*Aythya valisineria</i>	Local Concern	Probable
	Aleutian Canada goose	<i>(W)Branta Canadensis leucopareia</i>	FSC (Delisted)	Present
	Barrow's goldeneye	<i>*Bucephala islandica</i>	CSC	Present
	Harlequin duck	<i>*Histrionicus histrionicus</i>	FSC, CSC	Possible
	Cooper's hawk	<i>*Accipiter cooperi</i>	CSC	Present
	Sharp-shinned hawk	<i>*Accipiter striatus</i>	CSC	Present
	Golden eagle	<i>*(W)Aquila chrysaetos</i>	CSC, CFP	Present
	Ferruginous hawk	<i>(W)Buteo regalis</i>	FSC, CSC	Possible
	Northern harrier	<i>*Circus cyaneus</i>	CSC	Present
	White-tailed kite	<i>*Elanus leucurus</i>	FSC, CFP	Present
	Bald eagle	<i>*(W)Haliaeetus leucocephalus</i>	FT, FPD, SE	Possible
	Osprey	<i>*Pandion haliaetus</i>	CSC	Present
	Merlin	<i>(W)Falco columbarius</i>	CSC	Possible
	Prairie falcon	<i>*Falco mexicanus</i>	CSC	Possible
	American peregrine falcon	<i>*Falco peregrinus anatum</i>	FSC, SE, CFP	Possible
	California black rail	<i>Laterallus jamaicensis coturniculus</i>	FSC, ST	Present
	Black oystercatcher	<i>*Haematopus bachmani</i>	Local Concern	Present
	Long-billed curlew	<i>*Numenius americanus</i>	FSC, CSC	Present
	California gull	<i>*Larus californicus</i>	CSC	Present
	Caspian tern	<i>*Sterna caspia</i>	Local Concern	Present
	Elegant tern	<i>*Sterna elegans</i>	FSC, CSC	Present
	Forster's tern	<i>*Sterna forsteri</i>	Local Concern	Present
	Short-eared owl	<i>*Asio flammeus</i>	CSC	Present
	Long-eared owl	<i>*Asio otus</i>	CSC	Possible
	Burrowing owl	<i>*Athene cunicularia</i>	FSC, CSC	Present
	Northern spotted owl	<i>Strix occidentalis caurina</i>	FT	Present

BIRDS (cont'd)	Vaux's swift	<i>*Chaetura vauxi</i>	FSC, CSC	Possible
	Black swift	<i>*Cypseloides niger</i>	FSC, CSC	Possible
	Rufous hummingbird	<i>Selasphorus rufus</i>	Local Concern	Possible
	Allen's hummingbird	<i>*Selasphorus sasin</i>	FSC	Present
	Lewis' woodpecker	<i>*Melanerpes lewis</i>	FSC	Possible
	Red-breasted sapsucker	<i>*Sphyrapicus ruber</i>	FSC	Probable
	Olive-sided flycatcher	<i>*Contopus cooperi</i>	FSC	Probable
	Willow flycatcher	<i>*Empidonax trailii</i>	SE	Possible
	Loggerhead shrike	<i>*Lanius ludovicianus</i>	FSC, CSC	Probable
	California horned lark	<i>Eremophila alpestris actia</i>	CSC	Probable
	Purple martin	<i>*Progne subis</i>	CSC	Possible
	Bank swallow	<i>*Riparia riparia</i>	FSC, ST	Possible
	Hermit warbler	<i>*Dendroica occidentalis</i>	FSC	Probable
	Yellow warbler	<i>*Dendroica petechia brewsteri</i>	CSC	Probable
	Saltmarsh common yellowthroat	<i>Geothlypis trichas sinuosa</i>	FSC, CSC	Present
	Yellow-breasted chat	<i>*Icteria virens</i>	CSC	Possible
	Lark sparrow	<i>*Chondestes grammacus</i>	FSC	Possible
	Brewer's sparrow	<i>*Spizella breweri</i>	Local concern	Possible
	Chipping sparrow	<i>*Spizella passerina</i>	Local concern	Probable
	Tricolored blackbird	<i>*Agelaius tricolor</i>	FSC, CSC	Probable

Status Codes: FE = Federal Endangered; FT = Federal Threatened; FC = Federal Candidate for listing; FPD = Federal Proposed for Delisting; FSC = Federal Species of Concern; SE = State Endangered; ST = State Threatened; CFP = California Fully Protected; CSC = California Species of Concern

APPENDIX K: IDENTIFYING AND PRESERVING PARK AESTHETIC VALUES AND SPIRIT OF PLACE

There is a difference between identifying “aesthetic values” and “spirit of place” for the purposes of this document. Aesthetic values are based on impressions from the commonly-known five human senses, and “spirit of place” refers to the overall feeling that is created when sensory impressions are combined. In a park, a feeling of “spirit of place” is created by the natural and cultural resources in which a visitor is immersed. Individuals may define perception of a place differently; however, there are many impressions that would be common to most park visitors.

Identifying and documenting these qualities for use in park development and interpretive, resource and maintenance programs is an important first step in improving visitor experience at the park and in helping preserve these qualities for the future.

The following paragraphs outline a process for achieving and maintaining the General Plan goals of preserving and promoting positive aesthetic values and the park’s natural spirit of place. Please refer to the plan’s Adaptive Management Process information as a way of maintaining these values into the future.

IDENTIFICATION OF THE PARK’S SPIRIT OF PLACE AND AESTHETIC VALUES

As specific park projects and programs are implemented, more detailed definitions of the park’s aesthetic and spirit of place values can be developed through the process outlined below.

If possible, park design professionals, resource specialists, and operations staff should all contribute to the development of a definition of the park’s overall positive and negative aesthetic values and spirit of place. Public input is valuable as well. The values documented as a first step in development of individual projects should accumulate and contribute to this overall definition, to be further used in the creation of each new project for the park.

PROCESS FOR SPECIFIC PARK PROJECTS AND PROGRAMS

Identifying Aesthetic Values in a Project Site

In order to define the qualities of a place that constitute its aesthetic values, attention must be paid to both small details and the larger picture. The process should include analyzing such elements as visual patterns and textures and expanding vistas or focused views; the local qualities of light, temperature, scent, humidity, and sound; the movement of air, plants, animals and water; the characteristics and feel of soil, rock and terrain; and include existing knowledge of the place (including park and resource history) and individual memories of park experiences and impressions. In addition, existing park facilities must be evaluated as part of a visual (and possibly using other senses) inventory of public use and park operations areas of the park.

The first step in identifying aesthetic values at a specific project site is to spend enough time at the site to be familiar with its existing elements, both positive and negative. Ideally, visits to the project site to gather sensory data (raw aesthetic data) should occur at different times of day and in all seasons, and information gathered should be recorded in a clear format for future use. For example, the following descriptive format could be used, or there could be a simple “bullet” listing of sensory impressions:

June 23, 2003: Impressions of the Indian Beach project site

Smelled the spicy scent of a grove of bay trees. Saw the sensuous red skin of a peeling madrone and felt the forest’s mossy quiet. Saw shimmering strands of spider silk catching a shaft of sunlight (beautiful – like glimmering silver). Heard the faint roar of the Pacific drifting over the ridge with the evening fog (delightful – made me feel the power of the ocean, even though so far away). Felt a deer watching me by the creek before I saw it through the foliage (mystical). Picked up a strange fishbone on the mud of a retreating tide, prompting questions in my mind about sea life in the bay. Heard the yodeling summer call of the loon echoing off the bay (mysterious – what’s it talking about?). Touched the dark nacreous earth where the Indians ate shellfish for centuries—it looked rich with organic matter, and felt dense, fine-grained, and greasy. Saw the unkempt gravel parking lot with haphazard vehicle parking and dilapidated signs. Saw garbage containers from a distance with animal-scattered trash around them.

Identifying the “Spirit of Place” in a Project Site

From a combination of all sensory impressions, an overall sense (or “spirit”) of place can be felt and defined. Collected sensory data (above) should be used in formulating a description of the site’s natural spirit of place. For example, using the data above, the following spirit of place description could be developed:

Indian Beach Spirit of Place

Indian Beach, except on the stormiest of days, has an overall quality of peace and quiet, with moderate- to low-level intermittent sounds of wildlife and waves, both from Tomales Bay and the Pacific Ocean over the ridge to the west; an ephemeral atmosphere of cool, moist fog and sunlight; in the estuary, variably-colored, textured, and scented vegetation of differing heights that rest the eye and delight the nose, especially in summer, and birds twittering in the foliage above; dark and shell-filled earth created over thousands of years of human habitation that feels good on the hands and imparts a sense of history; a wide, long beach that invites relaxation and play, and has the potential of creating excitement through beach-combing and discovering unusual natural specimens; and the potential of hearing and seeing wildlife that people experience only in isolated places like this.

Using Aesthetic and Spirit of Place Definitions in Facility and Program Development and Maintenance

After completing the process outlined above, the project team should create a “Project Site Aesthetics and Spirit of Place” document as part of a first step (or in the “study phase”) in implementing the project. This document should function as a shorthand method of remembering site values and to introduce future project team members to important aesthetic values at the site. In reviewing this information, a team member would have the benefit of a compilation of many impressions and hours spent at the site by other individuals. The information should help in building the comprehensive base of knowledge necessary for completion of a relevant, successful project for the public. The document should also be included in the park’s resource inventory database.

Using the information generated above, the positive elements of a project site can be more easily retained and enhanced and negative situations modified. Creative project design and construction methods, and interpretation, resource management, and maintenance programs should highlight and interpret positive aesthetic values and the site’s spirit of place to help create stronger connections to the site and improve visitor experiences at the park.

Operations staff should incorporate the document’s information into maintenance procedures and programs to help preserve these important park values into the future. The document should be added to over the years by future project teams and other interested parties to create a more comprehensive documentation of the park’s aesthetic and spirit of place values through time.

APPENDIX L: PLANNING INFLUENCES

Existing State Park system-wide planning influences that cross park and regional boundaries may affect planning decisions regarding Tomales Bay State Park. The following represent such influential policies, regulations, and plans.

System-Wide Planning Influences

Federal:

- Americans with Disabilities Act of 1990, Title II and III
- Clean Water Act, Section 404
- Federal Endangered Species Act
- Federal Migratory Bird Treaty Act
- National Environmental Policy Act (NEPA)
- Secretary of the Interior's Standards for the Treatment of Historic Properties, revised in 1992

State:

- California Code of Regulations
- California Department of General Services, Division of the State Architect, Access Compliance
- California Endangered Species Act
- California Environmental Quality Act (CEQA)
- California Fish and Game Code
- California Native Plant Protection Act
- California Public Resources Code:
 - Section 5019.50 State Park Classification
 - Section 5024 Preserving and Maintaining all State-owned Historical Resources
 - Section 5097.99 Felony Possession of Native American Human Remains and Artifacts
 - Section 5097.991 Repatriation
 - Section 5020.1(g) Native American Heritage and Department of Parks and Recreation Gathering Policy
 - Section 21083.2 Unmitigated Significant Effects on Archeological Sites
- Natural Communities Conservation Planning Act

California Department of Parks and Recreation:

- California Department of Parks and Recreation Operations Manual
- California Department of Parks and Recreation Administrative Manual
- California Recreational Trails Plan
- California State Park and Recreation Commission Statements of Policy
- California State Parks System Plan
- Planning Handbook
- California State Parks Access to Parks Guidelines
- California State Parks Mission Statement

- Park Concessions Policies
- Policies, Rules, Regulations, and Orders of the California State Park and Recreation Commission and the California Department of Parks and Recreation
- Resource Management Directives.

Regional Planning Influences

The policies, plans and programs of agencies and organizations in the region affect the park in various ways. These influences represent government on many levels and address regional issues that may affect planning decisions at Tomales Bay State Park.

Federal:

- U.S. Department of Commerce National Marine Fisheries Service
- U.S. Department of Commerce (Gulf of the Farallones National Marine Sanctuary)
- U.S. Department of Interior, National Park Service (Point Reyes National Seashore, Golden Gate National Recreation Area)
- U.S. Fish and Wildlife Service
- U.S. Army Corps of Engineers

State:

- California Coastal Commission
- California Department of Fish and Game
- California Department of Forestry and Fire Protection
- California Department of Transportation
- California Regional Water Quality Control Board

County and Local:

- Bay Area Air Quality Management District
- County of Marin
- Marin Municipal Water District
- San Francisco Regional Water Quality Control Board
- Tomales Bay Watershed Council

APPENDIX M: GLOSSARY OF GEOLOGIC TERMS

Definitions in this glossary are predominately excerpted from the American Geology Institute (AGI) Dictionary of Geological Terms, with some definitions supplemented from the USGS Geologic Glossary webpage. Words underlined within a definition are also defined in this glossary.

Alluvium – sand, gravel, silt, and clay deposited by rivers and streams in valley bottoms or on beaches.

Basalt – A fine-grained, dark extrusive igneous rock with low silica content (40% to 50%), rich in iron, magnesium and calcium. Basalt generally occurs in flows and also as dikes. It is the most abundant volcanic rock in the Earth's crust and makes up most of the ocean floor. See igneous rock chart at end of glossary.

Chert – a hard, dense, microcrystalline variety of quartz that forms in a marine environment from the altered silica shells of radiolarians (tiny protozoans (animals) similar to plankton).

Clay – A particle of sediment less than 1/256 of a millimeter in diameter. Also, a family of platy silicate minerals that commonly form as a product of weathering.

Conglomerate – a coarse-grained sedimentary rock composed of rounded to subangular fragments larger than 2 millimeters in diameter (gravel, cobbles, boulders) in a finer-grained matrix of sand and/or silt, cemented with calcium carbonate, iron oxide, silica, or hardened clay.

Cretaceous – the final period of the Mesozoic Era, from 135 to 65 million years ago (see geologic time scale at end of glossary).

Feldspar – a group of silicate minerals containing varying amounts of potassium, sodium, and calcium along with aluminum, silicon, and oxygen. Potassium (alkali) feldspars contain considerable potassium. Plagioclase feldspars contain considerable sodium and calcium.

Granite – a light-colored, coarse-grained igneous rock consisting of alkali feldspar (orthoclase) and quartz, with lesser amounts of sodic plagioclase feldspar, micas, and hornblende. See igneous rock chart at end of glossary.

Granitic – of, pertaining to, or composed of granite or granite-like rock.

Granodiorite – a group of coarse-grained intrusive igneous rocks intermediate in composition between quartz diorite and quartz monzonite, containing quartz, oligoclase or andesine (plagioclase), and potassium feldspar, with lesser amounts of biotite or hornblende. See igneous rock chart at end of glossary.

Gravel – all sedimentary particles (rock or mineral) larger than 2 millimeters and smaller than 64 millimeters in diameter.

Greenstone – a field term for any compact dark-green altered or metamorphosed basic igneous rock (such as basalt) that owes its green color to actinolite, chlorite, or epidote (green-colored silicate minerals).

Greywacke – a dark grey, well indurated, coarse-grained sandstone that consists of poorly sorted angular to subangular grains of quartz, feldspar, and rock fragments embedded in a compact clayey matrix with the general composition of shale.

Holocene – An epoch of the Quaternary Period, from the end of the Pleistocene, approximately 8,000 years ago to the present time (see geologic time scale at end of glossary).

Igneous – a rock or mineral that solidified from molten or partly molten material, i.e. from a magma. Extrusive igneous, or volcanic rocks, are erupted onto the earth's surface and are usually fine-grained with some larger crystals. Intrusive igneous, or plutonic rocks, cool and solidify at depth and are usually coarse-grained.

Jurassic – the second period of the Mesozoic Era, covering the time span from 190 to 135 million years ago (see geologic time scale at end of glossary.)

Limestone – a sedimentary rock consisting chiefly of the mineral calcite (calcium carbonate, CaCO₃) with or without magnesium carbonate. Common impurities include chert and clay. Limestone is the most widely distributed of the carbonate rocks and is the consolidated equivalent of limey mud, calcareous sand, and/or shell fragments.

Magma – naturally occurring molten rock material, generated within the earth and capable of intrusion and extrusion, from which igneous rocks have been derived through cooling and solidification.

Mantle – the zone of the earth below the crust and above the core.

Marble – a metamorphic rock consisting of predominately fine-grained to coarse-grained recrystallized calcite (calcium carbonate) and/or dolomite (magnesium carbonate). Formed from metamorphism of a sedimentary limestone rock.

Mesozoic – One of the eras of geologic time, following the Paleozoic and succeeded by the Cenozoic Era. The Mesozoic comprises the Triassic, Jurassic, and Cretaceous periods, from 245 to 66.4 million years ago (see geologic time scale at end of glossary).

Metamorphic – pertaining to the process of metamorphism or to its result.

Metamorphism – the mineralogical, chemical, and structural adjustment of solid rocks to physical and chemical conditions imposed at depth below the earth's surface. Increases in temperature and pressure cause new minerals to grow.

Mica Schist – a metamorphic rock, containing abundant mica (platy silicate minerals) with a strongly foliated (linear) habit. The platy minerals are aligned parallel to each other and often in distinct bands of dark and light minerals, giving the rock a shiny appearance.

Paleozoic - One of the eras of geologic time, following the Precambrian and succeeding the Mesozoic. The Paleozoic comprises the Cambrian, Ordovician, Silurian, Devonian, Carboniferous, and Permian periods, from 570 to 245 million years ago. See geologic time scale at end of glossary.

Plagioclase – a member of the feldspar mineral family. Plagioclase feldspars are silicates that contain considerable sodium and calcium.

Pleistocene – an epoch of the Quaternary Period, after the Pliocene of the Tertiary and before the Holocene. It began 1.6 million years ago and lasted until about 8,000 years ago (Holocene). Syn: *ice age; glacial epoch*

Pliocene – The latest epoch of the Tertiary period, beginning about 5.3 million years ago and ending 1.6 million years ago. See geologic time scale at end of glossary.

Pluton – an igneous intrusion or body of rock formed by emplacement of magma at depth.

Quartz Diorite: An igneous rock having the composition of diorite, but with 5-20% quartz. (Diorite – an intrusive igneous rock made up of plagioclase feldspar and amphibole or pyroxene. Similar to gabbro, but with less dark (mafic) minerals and more silica. See igneous rock chart at end of glossary.

Quartzite – an even-grained metamorphic rock consisting mainly of quartz, formed by recrystallization of sandstone by regional or thermal metamorphism.

Quaternary – The most recent period of the Cenozoic era, encompassing the time interval of 1.6 million years ago through today. See geologic time scale at end of glossary.

Roof Pendant – a downward projection of country rock into an igneous intrusion. The country rock is the older sediments that were intruded by the magma and metamorphosed.

Sand – loose particles of rock or mineral that range from 0.0625-2.0 millimeters in diameter.

Sandstone – a clastic sedimentary rock composed of grains of sand-sized particles (usually quartz or feldspar) in a matrix of silt and/or clay and cemented to some degree by silica, iron oxide, or calcium carbonate.

Scheelite – a brown tungsten ore, chemical formula CaWO_4 . It is found in quartz veins associated with granitic rocks and in metamorphosed roof pendants.

Shale – a fine-grained detrital sedimentary rock, formed by the compaction of clay, silt, or mud. It has a finely laminated structure, which gives it a fissility along which the rock tends to split readily.

Silt - loose particles of rock or mineral that range from 0.002-0.0625 millimeters in diameter.

Subduction Zone – an elongate region along which a crustal block descends relative to another crustal block, such as the descent of the Pacific plate beneath the Andean plate along the Andean trench.

Turbidity Current – an underwater bottom-flowing current laden with suspended sediment, moving swiftly downslope and spreading horizontally on the ocean floor (continental shelf).

Volcanic rock – an igneous rock that cools and solidifies at or very near the Earth's surface.

Volcanic arc – an arcuate chain of volcanoes formed above a subduction zone. The arc forms where the descending plate becomes hot enough to release water and gases into the overlying mantle and cause it to melt.

APPENDIX N: GENERAL PLAN CONTRIBUTORS

Northern Service Center Team Members
Monica Aleman , State Historian II, <i>History</i>
Laurie Archambault , Senior State Park Resource Ecologist, <i>Resource Ecology</i>
Gudrun Baxter , Associate Landscape Architect, <i>Landscape Architecture, Environmental Analysis</i>
Ray Benson , Associate State Archeologist, <i>Archaeology</i>
Carrie Bemis , Assistant State Park Resource Ecologist, <i>Resource Ecology</i>
Kathleen Considine , Associate Engineering Geologist, <i>Geology</i>
Bob Hare , Associate Park and Recreation Specialist, <i>Project Manager</i>
Dave Keck , Senior Landscape Architect, <i>Supervisor of General Planning Section</i>
Krysten Laine , GIS Analyst, <i>GIS Mapping</i>
Roy Martin , Associate State Park Resource Ecologist, <i>Plant Ecology</i>
Bill Orme , Senior Resource Ecologist
Diana Salter , State Park Interpreter II, <i>Interpretation</i>
Jason Spann , Associate Landscape Architect, <i>Landscape Architecture, Mapping Coordination</i>
Ellie Wagner , Associate Park and Recreation Specialist, <i>CEQA Coordination, Landscape Architecture</i>
Sue Worley , Assistant State Park Resource Ecologist, <i>Wildlife</i>

North Bay District Team Members

Denali Beard, District Resource Specialist

Dave Boyd, District Resource Ecologist

Marianne Hurley, Marin District Historian, *History*

Ken Leigh, Marin District Superintendent

Tom Lindberg, North Bay District Chief Ranger

David Matthews, North Sector Supervising Ranger

Joseph Mette, North Bay District Superintendent

Carlos Porrata, Tomales Bay State Park Ranger

Ray Spencer, Park Maintenance Supervisor

Samantha Toffoli, District Interpreter

