INCLUDES 50 HIKING & BACKPACKING TRIPS

POINT REYES

The Complete Guide to the National Seashore & Surrounding Area

Jessica Lage

WILDERNESS PRESS

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2nd Edition

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WILDERNESS PRESS . . . *on the trail since 1967*

Point Reyes: The Complete Guide to the National Seashore & Surrounding Area

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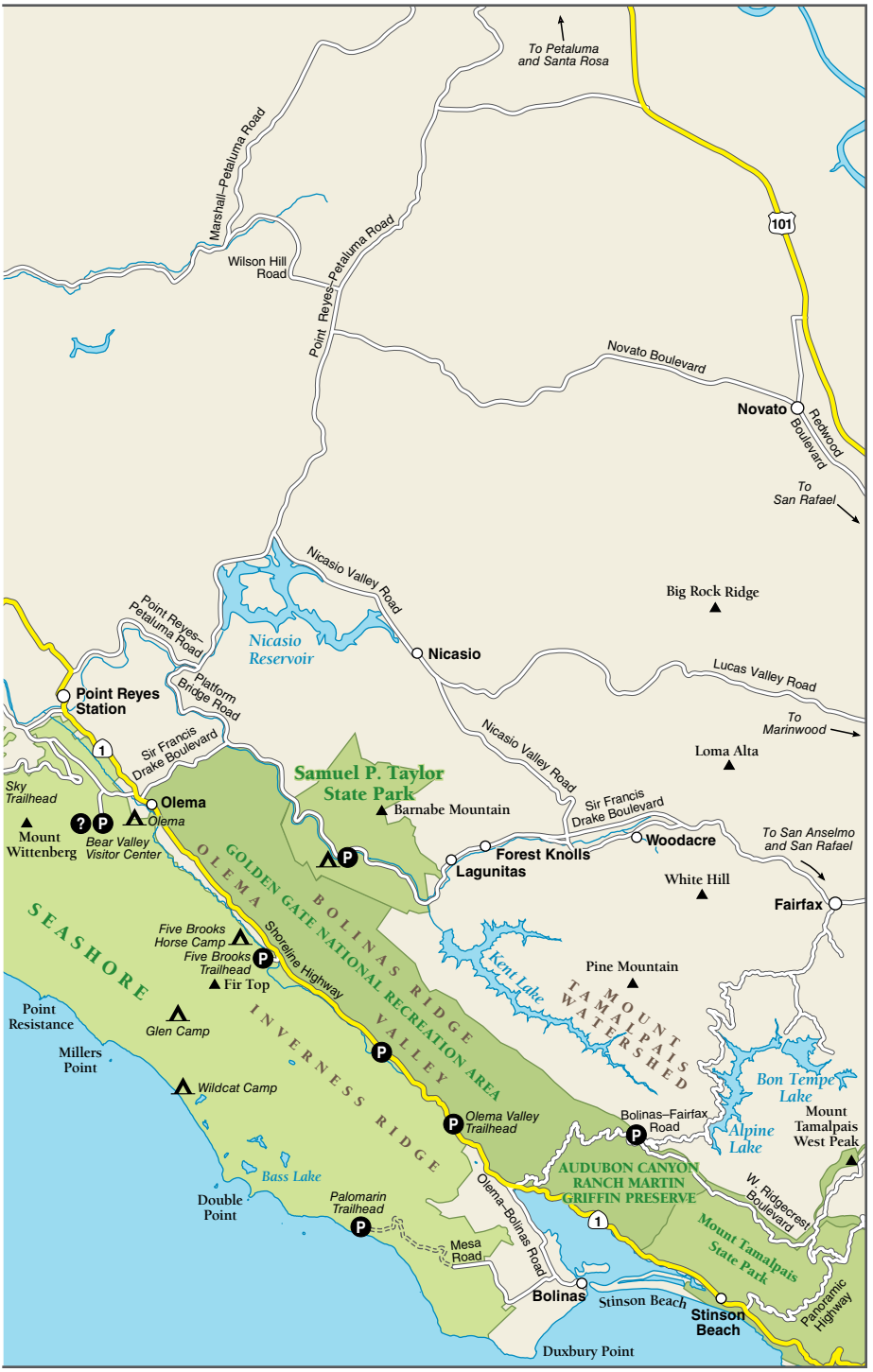
Routes to Point Reyes National Seashore

Point Reyes National Seashore and Vicinity


To Petaluma and Santa Rosa
Marshall–Petaluma Road
Wilson Hill Road
Point Reyes–Petaluma Road
101
Novato Boulevard
Novato
Redwood Boulevard
To San Rafael
Nicasio Valley Road
Big Rock Ridge
Point Reyes–Petaluma Road
Nicasio Reservoir
Nicasio
Lucas Valley Road
Platform Bridge Road
Point Reyes Station
To Marinwood
Loma Alta
Sir Francis Drake Boulevard
Samuel P. Taylor State Park
Barnabe Mountain
Sky Trailhead
Olema
Olema
Mount Wittenberg
Bear Valley Visitor Center
Forest Knolls
Lagunitas
Woodacre
To San Anselmo and San Rafael
White Hill
Fairfax
GOLDEN GATE NATIONAL RECREATION AREA
BOLINAS RIDGE
OLEMA VALLEY
SEASHORE
INVERNESS RIDGE
Five Brooks Horse Camp
Five Brooks Trailhead
Fir Top
Shoreline Highway
Kent Lake
Pine Mountain
MOUNT TAMALPAIS WATERSHED
Point Resistance
Glen Camp
Millers Point
Wildcat Camp
Olema Valley Trailhead
Bolinas–Fairfax Road
Bon Tempe Lake
Alpine Lake
Mount Tamalpais West Peak
AUDUBON CANYON RANCH MARTIN GRIFFIN PRESERVE
W Ridgecrest Boulevard
Bass Lake
Double Point
Palomarin Trailhead
Olema–Bolinas Road
Mesa Road
Mount Tamalpais State Park
Bolinas
Stinson Beach
Stinson Beach
Panoramic Highway
Duxbury Point

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Acknowledgments

FIRST, I ACKNOWLEDGE that Point Reyes National Seashore and surrounding parks and preserves lie on the unceded ancestral lands of the Coast Miwok people of present-day Marin and southern Sonoma Counties. I honor with gratitude the land itself, and all of its ancestors: past, present, and emerging.

Though this book is primarily a recreational guide, I've also set out to create a work that helps visitors better understand the landscape around them. I hope it calls attention to the Indigenous presence in what is now Point Reyes National Seashore, both historically and in the present. I also hope it helps visitors understand how their visit to Point Reyes might affect surrounding communities—from fire risk and increased traffic to strained septic systems and an overabundance of short-term rentals.

Many people in West Marin have shared with me their knowledge of and thoughtful reflections about their community; I am especially grateful to Mark Switzer, Dewey Livingtson, and Kim Thompson. I also deeply appreciate Theresa Harlan's taking the time to talk with me about the Felix family and her work to gain recognition of the longstanding Coast Miwok presence at Felix Cove/Lairds Landing. Many others whom I spoke with prefer to remain anonymous, but I am indebted to them as well.

Many people at Point Reyes National Seashore and Golden Gate National Recreation Area contributed to the first and second editions of this guidebook. The first time around, John Dell'Osso, then chief of interpretation for Point Reyes National Seashore, spoke with me and reviewed the manuscript. Bill Shook, Gordon White, Brannon Ketcham, Jane Rodgers, Shelly Benson, Ben Peterson, Kim Cooper, Sarah Allen, Jennifer Chapman, and Gary Knoblock all shared their extensive knowledge of Point Reyes with me and reviewed parts of the manuscript. Carola DeRooy tracked down and scanned photos from the National Park Service archive for the first edition. To update information about fire management and plant restoration projects for the second edition, I spoke with Lorraine Parsons, Greg Jones, and Alison Forrestel. Christine Beekman, Melanie Gunn, and Mary Beth Shenton all directed me to current information about the park.

I am grateful to naturalist Jules Evens and historian Dewey Livingston, who kindly reviewed sections of the first edition manuscript and provided valuable feedback. For the second edition, Dewey was again generous with his time and his wealth of information; he also helped find photos from the Jack Mason Collection and shared some of his own. I am also grateful to Gene Buvelot, tribal leader of the Federated Indians of Graton Rancheria, who spoke with me at the time of the first edition.

Many thanks to Bruce Rinehart for his time and enthusiasm, which culminated in the cover photo. Sara Loyster and Geoff Van Lienden generously offered their Point Reyes Station home many times, making my research easier and more enjoyable.

Thanks to the many people at Wilderness Press who have been involved with the two editions. Jannie Dresser encouraged the initial stages of the book in the early 2000s, and Molly Merkle again in 2020. Thanks to Kate Johnson for shepherding the project through its initial stages, and to Ritchey Halphen for his exceptional edits. Thanks as well to Ben Pease for his work on the maps in the first edition, to Scott McGrew for adapting Ben's maps for the second edition and designing the cover, and to the Wilderness creative team for their work on the interior redesign.

In the first edition, I was remiss in not acknowledging Dorothy Whitnah's book *Point Reyes: A Guide to the Trails, Roads, Beaches, Campgrounds, Lakes, Trees, Flowers, and Rocks of Point Reyes National Seashore* (1985), which this book replaced in the Wilderness Press collection and which provided a useful starting point for this guide.

In addition, I am deeply grateful to my family: my husband, Toni, and my children, Lucía and Alejandro, who accompanied me innumerable times on hikes and bike rides, were always fun companions and helped me see familiar things with new eyes. My mother, Ann Lage, was not only a companion on the trail but was also a keen editor and photographer. My brother, Jordan Lage, shared his photos; he and my sister, Katie Lage, have been companions on many excursions over the years, as have too many friends to mention here—but I appreciate them all. —*Jessica Lage*

Chapter 1

Making the Most of Your Point Reyes Experience

POINT REYES: A PLACE APART

JUST 30 MILES FROM SAN FRANCISCO, city routines fall away, the slow rhythm of rural life emerges, and the cycles of the natural world reign on rocky shorelines and in tidal marshlands and bishop pine groves. Trails wander through Douglas-fir forests, beaches rim the coastline, whales swim in offshore waters, and wildflowers swathe coastal grasslands. In an hour's drive or less, across bridge, on highway and on winding country road, you can reach this place apart—Point Reyes.

Called "an island in time" by those who fought to preserve the area as a national seashore, Point Reyes is recognized as unique—distinct in character from its urban environs, unparalleled in ecological diversity, and quite literally separated from the rest of Marin County and the Bay Area by the San Andreas Fault. Point Reyes National Seashore encompasses 71,000 acres on the Point Reyes Peninsula and draws 2.5 million annual visitors from around the world who explore the seashore's trails and beaches and visit nearby parks—Tomales Bay and Samuel P. Taylor State Parks, and the Golden Gate National Recreation Area. In the small towns nearby, visitors find gourmet food, comfortable accommodations, and scenic beauty—all the makings of a peaceful rural getaway.

While it may be a place apart, Point Reyes is also an integral part of its urban surroundings, providing weekend escapes and recreation for city dwellers and nourishing Bay Area cities with its agricultural riches. Point Reyes is anything but isolated from the world, and you'll find that you're not alone when you visit. Even before the COVID-19 pandemic, the trails and beaches were fuller than ever, and tourism in the surrounding towns had ballooned. During COVID, Bay Area residents took to the trails like never before, and Point Reyes, so close to this populous urban region, was inundated with visitors.

Point Reyes is a sanctuary of striking beauty and powerful natural forces, but its history is also one of exploration, exploitation, settlement, and recreation. Humans have "managed" the land and shaped the natural ecosystem for thousands of years. Coast Miwok people, the area's first inhabitants, burned grasslands and undergrowth around oak trees and depended on the wealth of animal and plant life for food. Letters from early visitors tell of animals now absent from the peninsula: a guest at one of the early ranches witnessed a duel between a bear and a bull—when grizzly bears still populated the area—and commented on the elk horns and bones scattered over the peninsula as the tule elk were hunted nearly to extinction. Starting in the 19th century, ranchers introduced new species of plants and animals to the peninsula and extinguished others. As they developed what became the most productive dairy industry in California, ranchers constructed roads for travel, dammed streams, and built levees in marshlands. Later, weekenders and recreationists built homes and changed the culture of the communities.

Today, small towns, ranches, Indigenous ancestral lands, and national-park lands continue to shape this rich history. The melding of agricultural land and wilderness area in the national seashore offers a unique present-day experience. In a 22,000-acre district in the northern region, many ranches still run beef and dairy cattle operations. You'll drive over cattle guards and pass cows grazing in pastures—and catch wafts of manure as you drive to beaches and trailheads in the seashore. These working ranches are a source of controversy today about the place of agriculture in national parks.

And in an adjacent 32,000-acre designated wilderness area, you can wander old ranch roads that have been converted into trails and follow a route to the site of a once-planned subdivision; you can bird-watch on a tranquil estero, once a wharf busy with schooners ferrying between ranches and San Francisco markets; and you can look for wildflowers and tule elk on the site of a once-thriving dairy ranch. Though the wilderness area is far from unaltered by human use, most human intervention is now limited mostly to recreationists who travel the trails and camp at former ranch sites, and to workers who perform the necessary maintenance that allows this.

As you explore the peninsula, you can visit Tomales Bay coves where Coast Miwok families lived well into the 20th century and where their descendants are working to protect cultural resources on ancestral lands. You can learn about the traditional practices of Coast Miwok people at Kule Loklo and Indian Beach.

The first edition of this guidebook—published nearly 20 years ago—not only introduced visitors to the trails and nearby communities but also described things that went on behind the scenes at Point Reyes, such as native-plant restoration on

beachside dunes, administration of birth control to the burgeoning population of tule elk, work to reduce fire risk, and preservation of agricultural land around the national seashore.

Two decades later, this edition reflects a different era for Point Reyes National Seashore and the surrounding area. Restoration work is ongoing, and in the early 2000s, the park purchased the Giacomini Ranch, which brought a wetland restoration project to the center of Point Reyes Station. The park no longer administers birth control to tule elk, but the elk have become central to a conflict regarding park management of natural resources and agriculture (see page 53). Fire risk has escalated in the park and surrounding communities, with climate change and ongoing drought; in 2020, the Woodward Fire burned 5,000 acres in the seashore. Climate change is also bringing new challenges and innovations for agriculture. When the first edition of this book was published, local agriculture and the growth of a local organic-food movement were central to shaping West Marin and the Point Reyes visitor experience; today, perhaps the most pressing question is what the future of agriculture will be—both within and around the national seashore.

It is also an important moment in time for the Indigenous present—not just the past—in Point Reyes, as descendants of Coast Miwok people work to expand recognition of the ongoing history of the land. The park has counted more than 100 Indigenous sites within its boundaries; not until the early 2000s were these sites protected from grazing cattle or other disturbances. As of now, however, the Coast Miwok sites (unlike the ranching district) are not listed on the National Register of Historic Places. In 2021, the Federated Indians of Graton Rancheria and the National Park Service (NPS) announced a government-to-government partnership, a step toward claiming a more active role for Coast Miwok people in protecting the land that their ancestors occupied for more than 10,000 years.

This book digs beneath the surface of Point Reyes and unearths its many layers, enriching your experience on the trails and beaches and in the bays and towns of the Point Reyes area. The beauty and complexity of each aspect of Point Reyes invite you in—to absorb the fantastic and exhilarating scope of the natural world, and to unwind in a quiet rural retreat.

SUMMARY OF TRIPS

ALSO SEE "Activities and Hikes by Theme and Weather" on page 13.

Trip Number | Trip Name	Page	Distance (Miles)	Trip Type	Difficulty
Point Reyes: Bear Valley Trailhead				
1 Bear Valley Trail to Divide Meadow and the Coast	103	3.2–8	↗	E–M
2 Bear Valley to Mount Wittenberg	106	4.4	↗	M
3 Bear Valley to Inverness Ridge	107	7–10.9	↶	M–S
4 Bear Valley to the Coast via the Mount Wittenberg and Woodward Valley Trails	109	12.7	↻	S
5 Bear Valley to the Coast via the Glen Trail	112	9.9	↶	M
6 Olema Marsh	114	4.5	↗	E
7 Rift Zone Trail	116	9*	↗	E–M
Point Reyes: Limantour Road Trailheads				
8 Mount Wittenberg via the Horse and Z Ranch Trails	123	4.5	↻	M
9 Loop Hike to the Coast on the Woodward Valley and Fire Lane Trails	125	9.5	↻	S
10 Coastal View Loop on the Bayview, Laguna, and Fire Lane Trails	128	6	↻	M
11 Bayview Trail Through Muddy Hollow to the Laguna Trail	130	5	↻	M
12 Inverness Ridge–Point Reyes Hill Loop	132	7.8	↻	S
13 Muddy Hollow Road to Limantour Beach	134	4	↗	E
14 Estero View Loop from Muddy Hollow	135	7.4	↻	M
15 Laguna–Fire Lane–Coast Trail Loop	138	5.1	↻	M
16 Beach Walk to Coast Camp	140	2.8	↗	E
17 Limantour Spit Trail	141	2	↗	E
Point Reyes: Sir Francis Drake Boulevard Trailheads				
18 Drive to Point Reyes Hill and Mount Vision	145	6**	↗	—
19 Estero Trail to Drakes Head	148	2–9.4	↗	M–S
20 Bull Point Trail	151	3.8	↗	E
21 Chimney Rock Trail	157	1.8	↗	E

* Round-trip and shuttle options

** Round-trip driving distance on Mount Vision Road. For details on hiking from the **Point Reyes Hill Trailhead** (where Mount Vision Road ends after 3 miles), see Trip 12 (page 132) and tinyurl.com/PointReyesHill.

↗ = out-and-back ↘ = one-way/shuttle ↻ = loop ↶ = semiloop

E = easy **M** = moderate **S** = strenuous

Trip Number | Trip Name	Page	Distance (Miles)	Trip Type	Difficulty
Point Reyes: Pierce Point Road Trailheads				
22 Marshall Beach and Lairds Landing Trails	164	2.4	↗	E
23 Abbotts Lagoon Trail	166	2.8–3.6	↗	E
24 Kehoe Beach to Abbotts Lagoon	170	5	↘	E
25 Tomales Point Trail	173	9.4	↗	M–S
Point Reyes: Five Brooks Trailhead				
26 Valley to Ridge Loop	177	7.1	↻	M–S
27 Stewart Trail to Wildcat Camp	181	12.8	↗	S
28 Five Brooks to the Coast	182	13.1	↻	S
29 Shuttle Trip to Palomarin	184	7.7–8.7	↘	M–S
30 Shuttle Trip to Bear Valley via the Greenpicker and Coast Trails	186	11	↘	S
31 Olema Valley Trail	188	11*	↗	E–M
Point Reyes: Palomarin Trailhead				
32 Coast Trail to Bass Lake, Wildcat Camp, and Alamere Falls	190	5.4–13.6	↗	M–S
33 Coast and Ridge Loop	191	11.2	↻	S
Tomales Bay State Park				
34 Jepson–Johnstone Loop	206	2.6	↻	E
35 Hearts Desire Beach to Shell Beach	207	4.6–8.4	**	M
Golden Gate National Recreation Area				
36 Bolinas Ridge Trail	209	22.2*	↗	E–S
37 Bolinas Ridge–Olema Valley Loop	213	8.1	↻	S
38 Tomales Bay Trail	214	2.6	↗	E
Samuel P. Taylor State Park				
39 Cross Marin Trail	220	7	↗	E
40 Pioneer Tree Trail	220	2.7	↻	E
41 Stairstep Falls	221	2.8	↗	E
42 Barnabe Mountain Loop on Bills and Ridge Trails	221	6.4–9.6	↻	S

* Round-trip and shuttle options
** Round-trip, shuttle, and semiloop options

↗ = out-and-back ↘ = one-way/shuttle ↻ = loop ↶ = semiloop

E = easy **M** = moderate **S** = strenuous

(continued on next page)

Trip Number | Trip Name	Page	Horses Allowed*	Bikes Allowed*	Dogs Allowed*	Day Hiking	Backpacking
Point Reyes: Bear Valley Trailhead						
1 Bear Valley Trail to Divide Meadow and the Coast	103	✓	✓		✓	
2 Bear Valley to Mount Wittenberg	106	✓			✓	✓
3 Bear Valley to Inverness Ridge	107	✓			✓	
4 Bear Valley to the Coast via the Mount Wittenberg and Woodward Valley Trails	109	✓			✓	
5 Bear Valley to the Coast via the Glen Trail	112	✓	✓		✓	✓
6 Olema Marsh	114	✓			✓	
7 Rift Zone Trail	116	✓			✓	
Point Reyes: Limantour Road Trailheads						
8 Mount Wittenberg via the Horse and Z Ranch Trails	123	✓			✓	✓
9 Loop Hike to the Coast on the Woodward Valley and Fire Lane Trails	125	✓			✓	✓
10 Coastal View Loop on the Bayview, Laguna, and Fire Lane Trails	128	✓			✓	
11 Bayview Trail Through Muddy Hollow to the Laguna Trail	130	✓			✓	
12 Inverness Ridge–Point Reyes Hill Loop	132	✓			✓	
13 Muddy Hollow Road to Limantour Beach	134	✓			✓	
14 Estero View Loop from Muddy Hollow	135	✓			✓	
15 Laguna–Fire Lane–Coast Trail Loop	138	✓			✓	✓
16 Beach Walk to Coast Camp	140	✓		✓	✓	✓
17 Limantour Spit Trail	141				✓	
Point Reyes: Sir Francis Drake Boulevard Trailheads						
18 Drive to Point Reyes Hill and Mount Vision**	145	—	—	—	—	—
19 Estero Trail to Drakes Head	148	✓	✓		✓	
20 Bull Point Trail	151		✓		✓	
21 Chimney Rock Trail	157				✓	

* Full or partial horse/bike/dog access; see specific trips for details. See Chapters 5 and 6 (pages 98, 152, 154, 168, 171, 190, 204, and 205) for additional information about dogs in the parks.

** For details on hiking from the **Point Reyes Hill Trailhead,** see Trip 12 (page 132) and tinyurl.com/PointReyesHill.

Trip Number | Trip Name	Page	Horses Allowed*	Bikes Allowed*	Dogs Allowed*	Day Hiking	Backpacking
Point Reyes: Pierce Point Road Trailheads						
22 Marshall Beach and Lairds Landing Trails	164	✓	✓		✓	
23 Abbotts Lagoon Trail	166	✓	✓		✓	
24 Kehoe Beach to Abbotts Lagoon	170	✓		✗	✓	
25 Tomales Point Trail	173	✓			✓	
Point Reyes: Five Brooks Trailhead						
26 Valley to Ridge Loop	177	✓			✓	
27 Stewart Trail to Wildcat Camp	181	✓	✓		✓	✓
28 Five Brooks to the Coast	182	✓			✓	✓
29 Shuttle Trip to Palomarin	184	✓			✓	
30 Shuttle Trip to Bear Valley via the Greenpicker and Coast Trails	186	✓			✓	✓
31 Olema Valley Trail	188	✓	✓		✓	
Point Reyes: Palomarin Trailhead						
32 Coast Trail to Bass Lake, Wildcat Camp, and Alamere Falls	190	✓			✓	✓
33 Coast and Ridge Loop	191	✓			✓	
Tomales Bay State Park						
34 Jepson–Johnstone Loop	206				✓	*
35 Hearts Desire Beach to Shell Beach	207				✓	*
Golden Gate National Recreation Area						
36 Bolinas Ridge Trail	209		✓	✗	✓	
37 Bolinas Ridge–Olema Valley Loop	213	✓	✓		✓	
38 Tomales Bay Trail	214				✓	
Samuel P. Taylor State Park						
39 Cross Marin Trail	220	✓	✓	✗	✓	
40 Pioneer Tree Trail	220	✓			✓	
41 Stairstep Falls	221	✓	✓		✓	
42 Barnabe Mountain Loop on Bills and Ridge Trails	221	✓	✓		✓	

* **Note:** Overnight trips are prohibited in Tomales Bay State Park.

USING THIS BOOK

Point Reyes: The Complete Guide to the National Seashore & Surrounding Area covers the entire Point Reyes area: the national seashore, Tomales Bay and Samuel P. Taylor State Parks, and activities and towns in the vicinity.

Chapter 1 introduces you to the Point Reyes area with brief and vital information about how to spend your time here in every season of the year. Are you a first-time visitor? Find out where to go and what to see. Do you have only an afternoon in the park? Find out the best short hikes and activities. Do you have an entire day and want a challenging hike? You'll find that here too. Are you looking for a beach where you can take your dog? Do you want a great hike for a foggy day? A trail with spectacular wildflowers, top spots to see spawning salmon, the best hikes for kids? You'll find a suggested activity for any day, in any season, in this chapter.

Chapters 2 and 3 relate the natural and human history of the area. They will help you understand, and better appreciate, what you're seeing on the peninsula.

Chapter 4 tells about the activities you can do in and around the national seashore, from hiking and kayaking to whale-watching and wildflower viewing. A tour of the area takes you from town to town, with details on what you'll find in each—galleries, bookstores, eateries, and fun events—and en route. You'll also learn about food produced on local ranches and farms and find out where to sample their products.

Chapter 5 explores Point Reyes National Seashore itself, dividing the seashore into six main areas, some with multiple trails from one trailhead, such as Bear Valley and Five Brooks, and others with many trailheads, such as along Limantour Road and Sir Francis Drake Boulevard. A brief introduction to each area and trailhead lists driving directions, facilities, and regulations to be aware of.

The trips from each trailhead or area follow. An icon following the trip name tells you if the trip is open to bikers, equestrians, and/or dogs in addition to hikers. Each trip begins with an overview that summarizes the highlights, terrain, and trails. Next, distance is given in miles, calculated using NPS maps and sometimes other published maps and guides. (*Note:* There are invariably discrepancies between distances given in books and maps and on park signs.)

Type describes the route as a loop, semiloop, out-and-back, or shuttle. **Difficulty** rates the hikes from easy to strenuous, based primarily on distance and grade. **Facilities**—if different from the trailhead facilities—tells you where to find toilets, water, phones, and picnic tables; note, however, that there are often no facilities at the trailhead or along the route. **Regulations** outlines rules for dogs, bikes, and horses on the route. **Directions** follow if there are multiple trailheads, such as those for the Limantour Road area. Finally, the **Description** takes you on the trip, pointing

out the terrain, vegetation, and views, with detailed directions and mileages at certain points. Information in boxes and margins expands on what you'll see along the way—and sometimes on things you *won't* see but which shape the landscape and your experience all the same.

Chapter 6 explores other parks and preserves in the Point Reyes area: **Tomales Bay** and **Samuel P. Taylor State Parks,** along with trails in the **Golden Gate National Recreation Area** that are adjacent to Point Reyes. Hikes and activities in each follow the same format as those in the national seashore.

MAPS

Two overview maps (pages iii and iv–v) orient you to the area. Seven trail maps correspond to trailheads and parklands in the national seashore and adjacent parklands; use these maps in conjunction with the trail descriptions in order to plan your trips. Trails are coded to show hiking, biking, and horse routes. The legend on the next page explains these route markings, along with the symbols used to indicate campgrounds, picnic areas, parking, toilets, water, phones, wheelchair-accessible routes, and ranches.

SEASONAL GUIDE

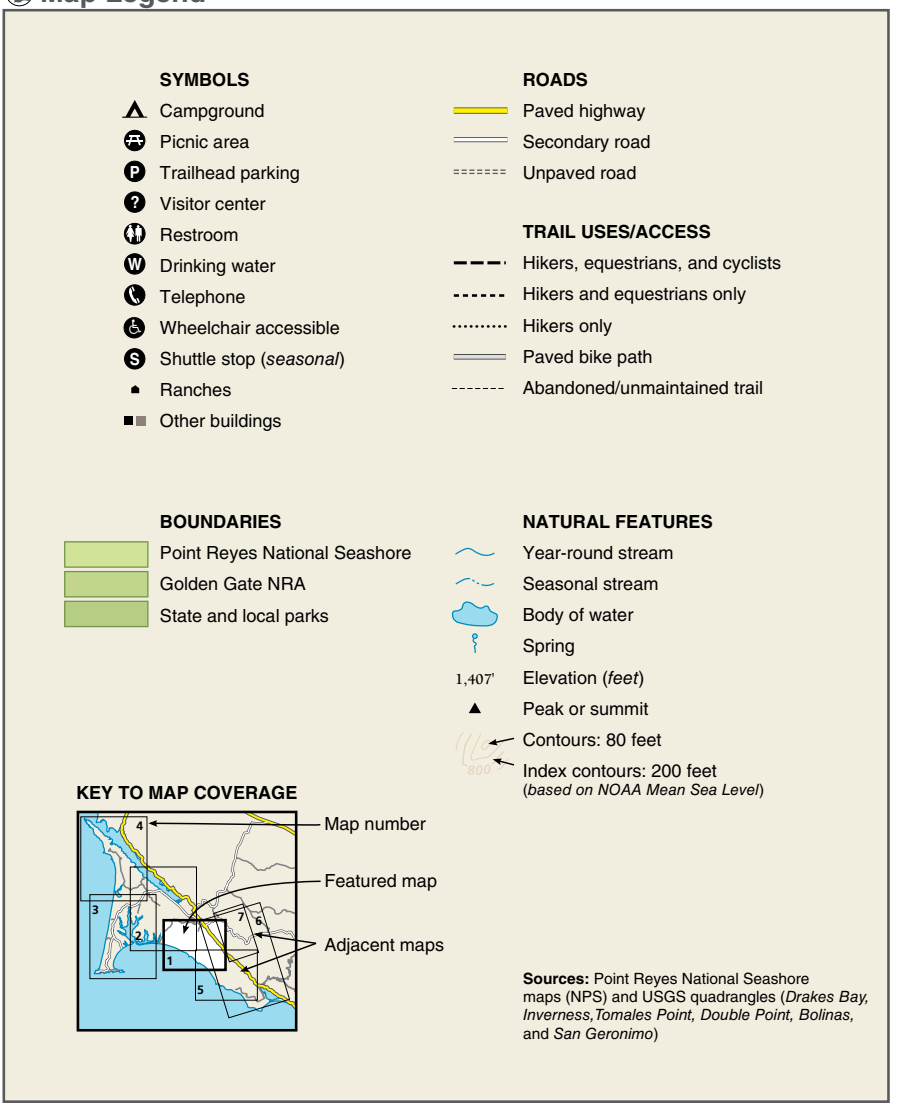
SEASONS AT POINT REYES CAN FOOL YOU. On a 70-degree day in January, you may wonder if you're south of the equator, and when you're shivering on a foggy July day, you might ask the same question. Clear days abound in fall and winter, spring ushers in changeable weather and strong breezes, and summer often brings dense coastal fog. Come to Point Reyes prepared for anything—fleece in August and shorts in December, rain jacket in April and T-shirt in November—but most of all, come prepared to be surprised and amazed at the beauty and variability of Point Reyes.

How do you decide what do to and when? Here are some suggestions. (See the calendar on page 12 for month-by-month highlights.)

Month by Month at Point Reyes

JANUARY–FEBRUARY Spring begins in winter at Point Reyes. Currant bushes bloom in coastal scrub, hound's-tongue and milkmaids decorate the forest, and occasional early-blooming Douglas iris peeks through grasses along coastal trails. January is the peak of the southern gray whale migration. Visit the **Point Reyes Lighthouse** and **Chimney Rock** for the best whale-watching points; hikes along the **Coast** and **Tomales Point Trails** and beach walks also may provide glimpses of passing whales. Look for winter birds at **Limantour Spit, Drakes Estero,** and **Abbotts Lagoon**. Moderate inland temperatures make hikes along **Bolinas Ridge** and in **Olema Valley** pleasant this time of year, and the pastures are usually green from winter rains.

Map Legend



MARCH–APRIL By March, wildflowers begin unfurling in the green grasslands and beneath lush forest cover, building to brilliant April displays all over the peninsula. The short walks at **Chimney Rock, Abbotts Lagoon,** and **Kehoe Beach** are among the best for wildflowers. Hikes along the **Coast, Fire Lane,** and **Laguna Trails** will take you through masses of purple blossoming ceanothus; in the **Bayview/Muddy Hollow** area and on the **Tomales Point** and **Estero Trails,** you'll find numerous types of wildflowers. Forested hikes from **Bear Valley** and **Five Brooks** display infinite shades of green and a more subtle wildflower show.

Whales and their young return north from Baja California in March and April; watch for them from the **Point Reyes Lighthouse** and **Chimney Rock,** on the **Coast** and **Tomales Point Trails,** and on walks along **Limantour Beach** and **Point Reyes Beach** (aka the Great Beach). Hikes at **Drakes Estero** and **Limantour Spit** offer good views of harbor seals during pupping season (March–June), but bring your binoculars so you can get a good look without disturbing the animals. Hikes near the esteros are also good places to watch for spring-migrating birds.

Billowing white clouds in a bright-blue sky characterize March and April's variable weather. Hot days intersperse weeks of chill and rain. Come prepared for strong winds at the headlands and on the beaches.

MAY–JUNE Most of May is still peak wildflower season at Point Reyes (see the previous page for the recommended trails). As spring moves into summer, the days lengthen, temperatures increase, and foggy days become more frequent. Come June, many wildflowers hang on in coastal scrublands and on beachside cliffs. Look for orange sticky monkeyflower on hikes to the coast from the **Sky Trail**—on the **Laguna, Fire Lane,** and **Woodward Valley Trails**—and take the short walks to **Kehoe** and **McClures Beaches** to see cliffside lizard tail and other beach plants.

JULY–AUGUST Explore the trails in **Tomales Bay State Park,** where Inverness Ridge often keeps the fog from reaching these bayside beaches, and warmer water invites swimmers and waders. The grassy hills and redwood forests of inland **Samuel P. Taylor State Park** are also usually fog-free but often hot in summer. The **Bolinas Ridge Trail** is often bathed in sun when fog envelops the coast, as is the **Olema Valley Trail**. For a different experience, hike to the coast from the **Sky Trailhead** or **Bear Valley Trailhead** to marvel at the puddles that collect from fog-drip along the ridgetop trails and to see bright displays of sticky monkeyflower.

SEPTEMBER–OCTOBER During the hot postsummer months, hikes in the wooded and riparian areas around the **Bear Valley** and **Five Brooks Trailheads** provide shade and a chance to enjoy changing fall colors. Brilliant-red poison oak leaves and more-subtle shades of bigleaf maple, alder, and willow enliven the forest. Leafless buckeyes reveal graceful branches, and berries hang from honeysuckle, huckleberry, and elderberry bushes. Since September and October are usually the hottest months of the year, you might want to avoid the exposed trails that head to the coast from the **Sky** and **Bayview Trailheads**. From **Palomarin,** the hike along the open bluffs of the **Coast Trail** may be hot, but **Bass Lake** is a cool and refreshing reward.

A Calendar of Cultural and Natural History Events at Point Reyes National Seashore

January	February
Anniversary of the naming of Point Reyes (January 6, 1603)	Elephant seal breeding (*see pages 156–157 for information about viewing locations*)
Coho salmon spawning	Pacific gray whale migration
Elephant seal pupping and breeding	Steelhead trout spawning
Pacific gray whale migration	
Shorebirds and waterfowl	
March	**April**
Bird migration	Bird migration
Elephant seal pupping and breeding	Harbor seal pupping
Harbor seal pupping	Pacific gray whale migration
Pacific gray whale migration	Wildflowers in bloom
Wildflowers in bloom	
May	**June**
Bird migration	Evening lighthouse programs
Harbor seal pupping	Harbor seal pupping
Point Reyes Open Studios tour	Wildflowers in bloom
Wildflowers in bloom	
July	**August**
Tule elk rut	Bird migration; shorebirds and waterfowl
Delta Aquarid and Perseid meteor showers	Sand Sculpture Contest; tule elk rut
September	**October**
Bird migration	Bird migration
Park anniversary (September 13, 1962)	Harvest Moon
Shorebirds and waterfowl	Shorebirds and waterfowl
Tule elk rut	Tule elk rut
November	**December**
Bird migration	Bird migration
Elephant seal breeding	Coho salmon spawning
Point Reyes Open Studios tour	Elephant seal breeding
Shorebirds and waterfowl	Shorebirds and waterfowl
	Lighthouse birthday (1870)
	Pacific gray whale migration

The fall bird migration is at its height in September and October, and the short trails along **Abbotts Lagoon, Kehoe Marsh, Limantour Spit,** and **Olema Marsh** are good places to observe it.

NOVEMBER–DECEMBER The peninsula's first storms often arrive in November, clearing the air and bringing great coastal views. By December, traces of green appear in the grasslands and rain moistens the forests, nurturing new growth, luscious ferns, and delicate mosses. You'll have superb views from the **Tomales Point, Coast,** and **Sky Trails.**

Shorter days begin to limit your hiking time as winter nears, but take advantage of the earlier sunsets and plan to be out as the sun falls below the horizon. Panoramic views from the **Inverness Ridge Trail** make it a great place to see the peninsula bathed in brilliant shades of pink—reflected in **Drakes** and **Limantour Esteros**—and still make it back to a trailhead with enough light to see your route.

ACTIVITIES AND HIKES BY THEME AND WEATHER

Suggestions for First-Time Visitors

Bear Valley Visitor Center and interpretive walks at Bear Valley for an overview of the park's cultural, natural, historical, and geological significance (see page 99)

Chimney Rock and Point Reyes Lighthouse (especially in spring for whales and wildflowers; see pages 157 and 158)

Pierce Point Ranch and Tomales Point Trail (Trip 25)

Mount Vision drive for a view of the peninsula (Trip 18)

What to Do If You Have Only an Afternoon

Beach walk at Limantour (Trips 13, 15, 16, 17)
Bolinas Ridge Trail from Sir Francis Drake Boulevard (Trip 36)
Hike to Divide Meadow (Trip 1)
Interpretive walks at Bear Valley (see page 99)
Mount Vision drive (Trip 18)
Muddy Hollow Trail (Trips 13, 14)
Chimney Rock and Point Reyes Lighthouse (see pages 157 and 158)
Shell Beach, Tomales Bay State Park (see page 204)

Picnicking Spots

Bear Valley Trailhead (see page 99)
Drakes Beach (see page 152)
Limantour Beach (Trips 13, 15, 16, 17)

(continued on next page)

Picnicking Spots (continued)

Pierce Point Ranch (Trip 25)
Samuel P. Taylor State Park (see page 218)
Tomales Bay State Park (Hearts Desire and Alan Sieroty Beaches; see pages 203 and 208)

Group Gatherings

Bear Valley Visitor Center (see page 99)
Drakes Beach (see page 152)
Hearts Desire Beach and Picnic Area, Tomales Bay State Park (see page 203)
Point Reyes Beach North and South (see page 154)

Wildflower Trails

Abbotts Lagoon Trail (Trip 23)
Chimney Rock Trail (Trip 21)
Coast Trail just south of Arch Rock (Trips 1, 5, 30)
Tomales Point Trail (Trip 25)

Creek and Waterfall Trails

Bear Valley Trail (Trip 1)
Coast Trail to Alamere Falls (Trip 32)
Olema Valley Trail (Trips 26, 31, 37)
Stairstep Falls, Samuel P. Taylor State Park (Trip 41)

Scenic Trails

Barnabe Mountain, Samuel P. Taylor State Park (Trip 42)
Bolinas Ridge Trail, Golden Gate National Recreation Area (Trip 36)
Chimney Rock Trail (Trip 21)
Coast Trail (Trips 4, 5, 30, 33)
Estero Trail to Drakes Head (Trip 19)
Inverness Ridge Trail (Trip 12)
Tomales Point Trail (Trip 25)
Woodward Valley Trail (Trips 4, 9)

Birding Trails

Abbotts Lagoon Trail (Trip 23)
Bayview Trail (Trips 11, 12)
Bear Valley Trail (Trips 1, 3, 4, 5, 30)
Chimney Rock Trail (Trip 21)
Estero Trail (Trip 19)

Giacomini Wetlands Trail (see pages 50 and 51)
Muddy Hollow Trail (Trips 13, 14)
Olema Marsh (Trip 6)

Foggy-Day Trails

TO REVEL IN THE FOG

Sky Trail along Inverness Ridge (Trips 3, 4, 8)
Tomales Point Trail (Trip 25)

TO *ESCAPE* THE FOG

Bolinas Ridge Trail, Golden Gate National Recreation Area (Trips 36, 37)
Olema Valley Trail (Trips 31, 37)
Rift Zone Trail (Trip 7)
Tomales Bay and Samuel P. Taylor State Parks (Trips 34, 35, 39–42)

Hikes to the Coast

From Bear Valley Trailhead (Trips 1, 3, 4, 5)
From Five Brooks (Trips 27, 28, 30)
From Laguna or Coast Trailhead (Trip 15)
From Muddy Hollow (Trip 13)
From Palomarin (Trip 32)
From Sky Trailhead (Trip 9)

Activities for/with Kids

INTERPRETIVE TRAILS

Earthquake Trail (see page 102)
Indian Beach Nature Trail, Tomales Bay State Park (see page 205)
Kule Loklo Trail (see page 102)
Pioneer Tree Trail, Samuel P. Taylor State Park (Trip 40)
Woodpecker Trail (see page 102)

BEACHES

Drakes Beach (see page 152)
Hearts Desire and Shell Beaches, Tomales Bay State Park (see pages 203 and 204)
Limantour Beach (Trips 13, 16, 17)

SHORT HIKES

Abbotts Lagoon and dunes (Trip 23)
Muddy Hollow (Trip 13)
Olema Marsh (Trip 6)
Rift Zone Trail (Trip 7)

Activities for/with Kids (continued)

BACKPACK TRIPS

Coast Camp (via bike or hike; see page 196)

Historic Sites

Lifeboat Station (see page 157)
Point Reyes Lighthouse (see page 158)
RCA maritime-radio facility (see pages 144 and 145)
Upper Pierce Point Ranch (see page 172)

Wheelchair-Accessible Sites and Trails

Abbotts Lagoon Trail, first 0.4 mile (Trip 23)
Bear Valley Visitor Center (see page 99)
Cross Marin Trail, Samuel P. Taylor State Park (Trip 39)
Earthquake Trail (see page 102)
Estero Trail, first 0.5 mile (Trip 19)
Kenneth C. Patrick Visitor Center (see page 153)
Lighthouse Visitor Center and observation deck (see pages 158 and 159)

Beaches You Can Drive To

Chicken Ranch Beach (Marin County Parks; see page 68)
Drakes Beach (see page 152)
Hearts Desire Beach, Tomales Bay State Park (see page 203)
Point Reyes Beach North and South (see page 154)

Beaches Accessible by a Short Walk

Indian Beach, Tomales Bay State Park, 0.5 mile (see page 204)
Kehoe Beach, 0.6 mile (see page 168)
Limantour Beach, 0.2 mile (Trips 16, 17)
Marshall Beach, 1.2 miles (Trip 22)
McClures Beach, 0.4 mile (see page 170)
Palomarin Beach, 1 mile (see page 181)
Pebble Beach, Tomales Bay State Park, 0.5 mile (see page 205)
Point Reyes Beach at Abbotts Lagoon, 1.8 or 1.2 miles (Trips 23, 24)
Shell Beach, Tomales Bay State Park, 0.3 mile (see page 204)

Beaches You Can Hike To

Kelham Beach (see page 74)
Limantour Beach (Trips 13, 15, 16, 17)
Santa Maria Beach (see page 74)
Sculptured Beach (see page 75)

Secret Beach (see page 74)
Wildcat Beach (see page 74)

Beaches Where You Can Take Your Dog

Note: Point Reyes National Seashore requires dogs to be on a leash (6 feet or shorter), and access may be restricted during the snowy plover nesting season.

Kehoe Beach (see page 168)
Limantour Beach (southern end; Trip 16)
Point Reyes Beach North and South (see page 154)

Overnight Trips

HIKE-IN CAMPING

Coast Camp (see page 196)
Glen Camp (see page 197)
Sky Camp (see page 195)
Wildcat Camp (see page 197)

CAR CAMPING

Samuel P. Taylor State Park (see page 216)

BOAT-IN CAMPING

Tomales Bay beaches (see pages 70 and 203)

BIKE-TO CAMPING

Coast Camp (see page 196)
Wildcat Camp (see page 197)

CAMPING IN THE REDWOODS

Samuel P. Taylor State Park (see page 216)

CAMPING ON THE COAST

Coast Camp (see page 196)
Wildcat Camp (see page 197)

CAMPING ON THE RIDGE

Glen Camp (see page 197)
Sky Camp (see page 195)

GREAT FOR KIDS

Coast Camp (see page 196)

Fairs and Festivals

Point Reyes Farmers Market: Saturdays, June–October, 9 a.m.–1 p.m., Toby's Feed Barn, Point Reyes Station; pointreyesfarmersmarket.org

Point Reyes Open Studios tour: Memorial Day and Thanksgiving weekends, Point Reyes Station, Inverness, and Olema; pointreyesart.com

Western Weekend and 4-H Parade: First weekend in June, Point Reyes Station

Chapter 2

NATURAL HISTORY

ON APRIL 18, 1906, the infamous San Francisco earthquake ruptured the ground, cutting a crack from Bolinas Lagoon to Tomales Bay. The land on either side of the fault wrenched horizontally a full 16 feet near the town of Point Reyes Station! (Reports cite 20 feet near Tomales and 18 feet at the Point Reyes Lighthouse.) The earthquake revealed the power and dynamism of this complex fault zone, and geologists quickly realized that the earth had been moving slowly but substantially along the San Andreas Fault for millions of years. The fault separates the Pacific Plate from the North American Plate—and the Point Reyes Peninsula from the mainland. Often called an island because of its geologic history, the peninsula is also an island of natural history—an outpost where a distinct geology and a mosaic of habitats have created a unique ecosystem, where nearly 15% of California's plant species and nearly 30% of the world's marine mammal species live.

For a more complete look at this area's fascinating natural history, see Jules Evens's exceptional book, *A Natural History of the Point Reyes Peninsula.*

Topography

WITHIN JUST 100 SQUARE MILES, the Point Reyes Peninsula displays a huge variety of landforms and environments. Understanding the topography of Point Reyes will help you unravel the complexity of the peninsula: once you know the lay of the land, you'll be able to decide where you want to spend your time.

To enter the unique world of Point Reyes, visitors must first cross the **San Andreas Fault,** which separates the peninsula from the mainland. The long trace of the fault runs beneath Tomales Bay, meets land at the bay's southern tip, and continues south through Olema Valley to Bolinas Lagoon, where it reenters the ocean. Pastoral **Olema Valley** is a showcase for the topography that fault zones often exhibit: small freshwater lakes (sag ponds) in unlikely places (such as on the crest or slope of a hill), creeks with complex drainage patterns, and uplifted and folded hills and ridges.

Inverness Ridge runs southeast–northwest along the peninsula. On the Tomales Point Trail, you are on the northern reaches of the ridge, where it rises gently from the west shore of Tomales Bay. To the south, the ridge slopes upward, first to Mount Vision and then higher to Point Reyes Hill (the second highest point on the ridge and a great spot to take in the panorama of the area). A few miles south, **Mount Wittenberg** crowns Inverness Ridge at 1,407 feet; its slopes descend to **Bear Valley,** the only breach in the ridgeline and a nearly level route to the coast.

At its southern end, Inverness Ridge eases into **Bolinas Mesa,** a level, wave-cut marine terrace northwest of Stinson Beach. On the Coast Trail, you'll be hiking on the coastal plateau that extends from Bolinas Mesa to **Limantour Estero,** a prominent feature of this coastline. Just south of Bear Valley, fault action and erosion caused a large landslide (nearly 5 miles long and at least a mile wide) that covers the once-continuous terrace and forces the trail up the ridge, along steep cliffs that drop to the ocean. Offshore, sea stacks and arches reveal the erosive power of the ocean. North of Bear Valley, the slopes of Inverness Ridge descend more gradually to the coast, and you can continue on the level terrace toward Limantour Beach.

On your way to the lighthouse and Chimney Rock, you'll pass **Drakes Estero,** which, like Limantour Estero, was a valley that filled with water eons ago when the coast was submerged. At the westernmost tip of the peninsula—Point Reyes itself—the lighthouse stands on rocky headlands above the ocean, and high cliffs drop precipitously to the water. Stretching northward from the point, **Point Reyes Beach** (aka the **Great Beach**) extends for 11 miles, and its high sand dunes often blow inland across pasturelands of the outer point. Beyond the Great Beach, **Tomales Point** extends high above the ocean to the mouth of Tomales Bay, where Inverness Ridge culminates in rocky granitic headlands.

Geology

THE 1906 EARTHQUAKE REVEALED the most significant structural feature of the Point Reyes Peninsula: the San Andreas fault zone. Were it not for the fault, this little triangle of land, nearly 30 miles long and 12 miles wide, would have a vastly different history, and indeed it would not be in its present location 30 miles north of San Francisco.

Geologists believe the Point Reyes Peninsula was once farther south—maybe as far as Mexico—and moved up the coast to land adjacent to the Monterey Bay area, about 60 million–15 million years ago. Over the subsequent millennia, the peninsula has crawled northward at an average rate of about 2 inches per year. Some of

this movement is what geologists call creep—slow, intermittent movement that we can't detect. Most of the journey, however, occurs in leaps and bounds, as when the peninsula moved by as much as 20 feet in 1906.

Evidence for the peninsula's movement north is in the rocks: the geology east and the geology west of the fault reveal dramatically different histories. The peninsula's granitic bedrock identifies it as part of the Salinian Block, a massive granitic block that extends west of the San Andreas Fault from Bodega Bay south to the Monterey peninsula. Similarities in the composition of the granite in the Monterey-area Santa Lucia Mountains and on the Point Reyes Peninsula suggest a common origin. Franciscan rocks—chert, serpentine, graywacke, and conglomerate—found on the Marin mainland do not exist west of the San Andreas Fault.

The peninsula's granitic foundation is its oldest rock. Exposed on the rocky cliffs above the ocean at Tomales Point and near the lighthouse, the hard granite is highly resistant to batterings by the Pacific's waves. Younger rocks and marine sediments overlay the granite on most of the peninsula. Point Reyes conglomerate, a unique composition of hard sedimentary rock, is the oldest of these marine sediments and occurs in just one spot on the peninsula—at Point Reyes itself. Look

THE 1906 EARTHQUAKE: THE HUMAN STORY

Most people have heard stories about San Francisco after the 1906 earthquake and subsequent fires, but few know that the quake was centered near Point Reyes and that the greatest displacement along the fault—some 20 feet—occurred along Tomales Bay. At 5:13 a.m. on April 18, 1906, in the town of Point Reyes Station, the 5:15 train to Sausalito tipped over from the force of the quake as it was preparing to leave the station. The log-cabin post office in Inverness caved in, bathhouses on the beach fell over, and summer homes slid off their foundations. The east side of Tomales Bay received the brunt of the damage, especially the railroad tracks and trestles along the shore. The quake demolished the church in Tomales, and the hotel at Marshall slid into the bay.

Derailed train in Point Reyes Station, 1906
Point Reyes National Seashore Archives/National Park Service

for a fascinating outcrop just above the stairs to the lighthouse: embedded egg-size pebbles of volcanic rock and several blocks of granite and chert give the conglomerate a warty appearance. Similarities between the volcanic rocks in the conglomerate and those found at Point Lobos in Monterey are further evidence that the Point Reyes Peninsula was once attached near Monterey.

Along the spine of Inverness Ridge from Tomales Point to Mount Wittenberg, only a thick layer of soil and vegetation covers the peninsula's granitic rocks. The marine sediments—Monterey shale and Laird sandstone—which once covered this northern section of Inverness Ridge, have eroded away over time. They still overlay the granite on Inverness Ridge south of Mount Wittenberg to Bolinas Mesa, and they extend over the western slopes to the coast. A soft, light-colored, muddy sediment, originally called the Drakes Bay Formation but now referred to as the Purisima Formation, covers the cliffs and hillsides around Drakes Bay. Its fine sand contains abundant fossils of invertebrates and other marine animals like seals, fish, and whales. The cliffs at Drakes Beach—likely those that reminded Sir Francis Drake of England's white cliffs of Dover—reveal this formation most dramatically.

Visit the **Earthquake Trail** at the Bear Valley Visitor Center (see page 102) to see the crack in the earth from the 1906 earthquake firsthand and to learn more about the quake.

Climate

There was a driving wind from the sea. The whole country round about was enveloped in a fog so dense that the eye could not penetrate it more than a dozen rods.

—Oscar Shafter, in a letter to his father, 1858

CLIMATE NOT ONLY INFLUENCES how you'll spend your day at the seashore, but it shapes every part of what you'll see when you visit—from the whales we spot offshore to the cattle grazing on the headlands. It is a vital element of the ecosystem. Were it not for Point Reyes' particular climate, its natural and human histories would be quite different: the cold, nutrient-rich upwelling in the Pacific supports the abundant marine life that inhabits the waters off the coast—the whales, seals, and sea lions that we scan the waters for and observe along the shoreline. The thick fogs that sweep over land provide moisture for a long growing season and foster the area's prime pastureland.

A typical Mediterranean climate—warm, dry summers and cool, rainy winters—characterizes Point Reyes. Moderated by the ocean, temperatures at Point Reyes are remarkably uniform throughout the year: midsummer and midwinter averages differ by only about 10 degrees. Within the park, however, numerous microclimates

create vastly different environments; in a single day, and within only a few miles, you may encounter great variations in temperature, fog, rainfall, and wind.

FOG

> *All who have tried to explore the Point Reyes dunes and downs in the midst of a cold summer fog can fully sympathize with the early English visitors and even forgive them the slight exaggerations that color their record.*
>
> —Thomas Howell, *Marin Flora*

Early visitors to Point Reyes frequently commented with great discouragement on the heavy fogs that blanketed the headlands and beaches. During the spring and summer, the upwelling along the Pacific Coast brings cold water to the ocean's surface; fog then forms when offshore air cooled over the water meets warm inland air swept to the coast by winds. The dense mists contribute significant moisture to the vegetation—as much as 10 inches of precipitation per year. Thick summer fogs on Inverness Ridge drench the tall grasses and create muddy puddles on the trail, reminiscent of winter rain.

As discouraging as this may sound to the visitor seeking sunny weather, microclimates at Point Reyes often come to the rescue. Even in summer, when fogs are most common and thickest, you are likely to find blue sky and sun, especially east of Inverness Ridge. The ridge often shelters the eastern slopes, the inland valleys, and Tomales Bay beaches from fog and wind. Interior and coastal temperatures may differ by as much as 20 degrees, especially in summer, when fog is most likely on the headlands.

PRECIPITATION

Rainfall on the peninsula also varies greatly between inland and coastal microclimates. Most precipitation falls on the peninsula between November and March. In inland valleys like Bear Valley, the average rainfall is about 36 inches a year, far heavier than the 12- to 19-inch average that falls on the outer headlands at the lighthouse.

WIND

Although strongest in spring, wind is usually a year-round presence on the headlands and the Pacific beaches. The annual maximum averages 43 miles per hour, but rare southerly windstorms in November and December bring the strongest blasts: the highest recorded wind velocity is 130 mph at the Coast Guard Station near the lighthouse. Winds usually pick up in the afternoon, so try to plan your trip to the lighthouse or Chimney Rock for the morning. Afternoon winds also make boating on Tomales Bay and the esteros more enjoyable in the morning.

Plant Communities

AN ASTOUNDING RANGE OF PLANT COMMUNITIES exists within just 100 square miles at Point Reyes. At 38 degrees latitude, Point Reyes is a convergence point for plants typical of coastal areas to the north and those to the south; it lies near the southern tip of the Douglas-fir range and the north edge of the coastal scrub community. Oak trees, bishop pine forests, grasslands, marshes, and intertidal areas all thrive in the multiple microclimates that the peninsula's complex topography and distinct soil types create. Point Reyes National Seashore is home to 900 species of flowering plants (including 15% of all the species that grow in California) and 50 rare plant species.

BISHOP PINE FOREST

Never far from the ocean, their striking bluff-top groves seem designed by Japanese printmakers. —Elna Bakker, *An Island Called California*

The bishop pine forest at Point Reyes is one of the most extensive in California, although a large part of it burned in the 1995 Vision Fire. Once widespread along the California coast and into Baja California, bishop pines (*Pinus muricata*) now grow only in scattered stands, always within a few miles of the ocean. These pines often take on a bonsai-like shape, contorted by strong winds and dwarfed by thin, nutrient-poor soils. Under ideal conditions—plenty of fog and precipitation and acidic soils with high moisture content—bishop pines grow into tall, regal trees, reaching heights between 40 and 70 feet.

Bishop pine cones

Bishop pines belong to a family of closed-cone pine trees; *closed* refers to a thick, resinous coating that seals their cones. Rather than opening at maturity, the cones require fire—or in rare cases, simply a particularly hot day—to open and release their seeds. Without the cycle of periodic fires

that release the seeds and generate new growth, the forest would die out within about 100 years. Bishop pines in a single stand tend to be the same age, because all of the trees usually have resprouted after the most recent fire.

The gray-green needles of bishop pines are short and stiff, about 3–6 inches long, and grow in clusters of two. The cones have a distinctive whorled pattern and are about 2½–3 inches long. Bishop pines usually have a dense, rounded crown and few lateral branches.

At Point Reyes, bishop pines grow almost exclusively on granitic soil, thus restricting the forest to the northern half of Inverness Ridge. Since the 1995 Vision Fire, the pines have sprouted all the way down the coastal slope. Around Sky Camp on Inverness Ridge, the bishop pine forest gradually gives way to the Douglas-fir forest prominent on the southern ridge (see next section).

Where soil conditions allow, other trees join the bishop pine forest. In moist and shady areas, California wax myrtle, coffeeberry, huckleberry, and salal grow under dense tree cover. Ceanothus, manzanita, and madrone take advantage of the exposed spaces between trees in drier forests. Bay laurel trees grow in damp canyons, with tanbark oak and Douglas-fir on arid slopes above. The Vision Fire burned much of the mature bishop pine forest in Point Reyes National Seashore, so the best place to see the established stands is in Tomales Bay State Park, which escaped the fire.

In the early 2000s, the *Fusarium circinatum* fungus was found in the Point Reyes bishop pine forest. The fungus causes a disease called pine pitch canker, which creates girdling lesions on branches and exposed roots. Pine pitch canker harms the tree in two ways: the lesions obstruct water flow within the tree, and the pitch that the trees excrete at the lesion site attracts beetles that attack the tree. The disease is spread more easily in the dense stands of postfire bishop pines; it also makes the forest more susceptible to fire, because the dead and downed trees increase the fuel load.

DOUGLAS-FIR FOREST

The Douglas-fir is a grand tree; some individuals within the Seashore rival redwoods in girth and height.

—Jules Evens, *A Natural History of the Point Reyes Peninsula*

Not a true fir, the Douglas-fir (*Pseudotsuga menziesii*) has a prominent presence on the Point Reyes Peninsula. (The hyphen in *Douglas-fir* is a botanical convention that indicates the tree is not a member of the fir genus, *Abies*.) The towering trees—some measuring between 300 and 400 feet tall—grow on the southern end of Inverness Ridge, in the deep shale and sandstone that overlay the granite base rock. The

Nest in a Douglas-fir near Glen Camp

Douglas-fir forest at Point Reyes is an outpost of the dense and uniform forests that grow to the north, as close as Sonoma County and throughout western Oregon and Washington, although it is missing several companion tree species that grow in the northern forests.

At Point Reyes, bay laurel trees join the Douglas-fir forest, and poison oak climbs tall trunks. In riparian areas around Bear Valley (near Coast, Olema, and Bear Valley Creeks), the forest is dense and the understory lush. Ferns and wild ginger thrive in the moist soils, and long trains of lichen hang from tree branches. The forest along the crest of Inverness Ridge and the slopes south of the Five Brooks Trailhead are drier, with a brushier understory of tanbark oak, huckleberry, coffeeberry, and honeysuckle.

Douglas-fir has short, soft, dark-green needles that grow all the way around the twigs. The cones hang from the tips of the twigs, 2½–4 inches long, with distinctive bracts between the scales. The bark of young trees is smooth and greenish gray; as the trees mature, the bark becomes dark brown, thick, and furrowed.

NORTHERN COASTAL SCRUB

Downslope of the Douglas-fir ridgeline, a rich mosaic of coastal scrub emerges on the western flanks of Inverness Ridge and stretches to shoreline bluffs. From afar, coastal scrub appears to be a uniform cover of shrubby vegetation, but up close you will find an astounding array of color, texture, shape, size, and fragrance. The deep, intoxicating aroma contained in the oils and resins on leaves is one of coastal scrub's most delightful characteristics.

Coastal scrub covers slopes and canyons along the Pacific Coast from Baja California to southern Oregon. Plants from grassland, chaparral, forest, coastal bluffs, and interior hills and canyons often find a place in this diverse community. In Southern and Northern California, coastal scrub takes on identifiably different

ERADICATING INVASIVE PLANTS

The nonnative plants that grow on the Point Reyes Peninsula arrived here at different points throughout history, both accidentally and intentionally. Some of the earliest invasives on the peninsula were European annual grasses. Their seeds first arrived in the early 1800s, on the hooves of the Californios' longhorn cattle. Later, dairy ranchers planted Italian ryegrass and cultivated hay, oats, and barley for feed. Early ranchers also planted another common nonnative: the blue gum eucalyptus tree. These eucalyptuses, used as windbreaks around ranches, are a "poster tree" for invasive species. Like European grasses and other nonnative plants, eucalyptuses grow and spread rapidly, taking over large swaths of land. They and other nonnatives become invasive because the diseases, parasites, and animals that kept them in check in their original homes are not present in their new habitat.

Point Reyes National Seashore is home to over 900 species of flowering plants, including 46 species designated as rare. Of these, about 300 are nonnative species—one-third of the seashore's entire plant population. Botanists are concerned about these nonnative plants not because they don't belong here, but because they interfere with the complex web of relationships between native plants and animals that underlies a healthy ecosystem. Invasive species are the second major cause of extinction (after habitat destruction) of rare plants.

Ice plant covered the Abbotts Lagoon dunes before restoration efforts began.

The National Park Service has implemented several projects at the seashore to eradicate invasive species, aiming to increase biodiversity and protect rare species. The pioneering project removed ice plant (*Mesembryanthemum,* a native of South Africa) near the lighthouse. Aerial photos and interviews with ranchers helped park biologists determine that ice plant was likely introduced to the area in the 1940s or 1950s. At the time, it was popular as a tool for erosion control on hillsides, but the rhizomatous plant spreads quickly through its root system and through the flower seeds, impeding a healthy and diverse habitat for other plants and animals. By the 1990s, expansive mats of ice plant on the rocky cliffs had consumed the habitats of some rare plants, including coast rock cress (*Arabis blepharophylla*); North Coast phacelia (*Phacelia insularis var. continentis*); and Point Reyes rein orchid (*Piperia elegans spp. decurtata*), which grows only in Point Reyes and nowhere else in the world.

Because ice plant resprouts very little, it makes a satisfying target for a restoration project. After the lighthouse cliffs, other projects removed ice plant in easier-to-access areas, particularly plots that were determined to be critical habitat areas, where ice plant and European beach grass *ammophila arenaria* had taken over. (See page 30 to learn about another project focused on the dunes at Abbotts Lagoon.)

Plant restoration projects can be tricky: whatever the intention, restoration work—like fire—disturbs the habitat in place and sometimes paves the way for other nonnatives. After removing the main culprits—ice plant and European beach grass—from many areas in the park, biologists found that their work was making space for other, less-hardy nonnative species, like European sea rocket, New Zealand spinach, and European black nightshade. Some of these species will taper out on their own; others need more-targeted removal. It is hard to predict how the ecosystem will evolve.

associations. At Point Reyes, the southern community tapers off, after a long transition zone from San Luis Obispo County to Marin County. Some typical southern species, such as California sagebrush, grow only as far north as Point Reyes, where plants in the northern scrub community begin to replace them.

On the western, scrub-covered slopes of Inverness Ridge, **coyote bush** (*Baccharis pilularis*) and **bush lupine** (*Lupinus arboreus*) are most prominent. On shady, relatively moist, north-facing hillsides, fronds of bracken and sword fern, tangles of **blackberry,** low-growing **salal,** tall **cow parsnip,** and graceful **currant bushes** also thrive. South-facing slopes nurture plants that grow in drier, sunnier locations, such as **sticky monkeyflower, California sagebrush, yerba buena,** and **coffeeberry.** Since the Vision Fire, **ceanothus** is perhaps the most prominent shrub on coastal slopes at Point Reyes; **poison oak** is ubiquitous, growing in tall, dense thickets or low bushes.

Coastal scrub plants sometimes also appear in the sandy soils of the outer point. A small-leaved, low-growing variety of coyote bush (var. *pilularis*) predominates here, joined by yellow-flowering bush lupine and lanky grasses.

NORTHERN COASTAL PRAIRIE AND COASTAL RANGELAND

Large tufts of native grasses once flourished on the Point Reyes mesa, thriving in the long coastal growing season. Buttercups, blue dicks, and ferns sprouted in small pockets of bare soil between grass clumps. When agriculture took hold on the peninsula, the coastal prairie largely disappeared, as European annual grasses—arriving on the hooves or coats of animals and in feed supplies—gradually took over the natives. Damaged by intense cattle grazing, the slow-growing perennial grasses could not compete with the annuals.

Virtually the entire eastern edge of Tomales Bay (east of California State Route 1) is coastal prairie. Native grasses and plants persist, although they are increasingly affected by velvet grass and tall fescue. These two invasives take over native vegetation, turning the prairie into a monoculture.

Today, grazed rangeland covers most of the rolling grasslands on the outer point, although a few remnants of the pre-agriculture habitat prairie survive. Low wildflowers and grasses cover drier, level plains, and moisture-loving sedges and rushes flourish in wetter swales. **Pacific hairgrass** (*Deschampsia holiciformis*), a hearty bunchgrass, still grows on Point Reyes prairies, despite grazing pressure. Two species of native bentgrass, **awned bentgrass** (*Agrostis aristiglumis*) and **Point Reyes bentgrass** (*Agrostis clivola* var. *puntareyensis*) survive only on the coastal prairies of Point Reyes.

Even among the dominant swath of annual grasses, wild bulbs like **Douglas iris, blue dicks, blue-eyed grass,** and **lilies** sprout in spring. **California buttercup, lupine, checkerbloom, goldfields, baby blue eyes,** and **footsteps of spring** also brighten the green fields with a tapestry of color. A rare variety of **yellow meadowfoam** (*Limnanthes douglasii sulphurea*), found only in Point Reyes, bursts into flower in March and April in vernal pools and wet swales; **rushes, sedges,** and **bracken ferns** grow among the grasses.

In 1980, a botanist found the rare **Sonoma spineflower** (*Chorizanthe valida*) growing on grazed coastal rangeland in Point Reyes National Seashore. Once common in Marin and Sonoma Counties, the flower was thought to be extinct until the Point Reyes population—the only one in the world—was discovered. In 2000, biologists and volunteers from the Point Reyes National Seashore Association, the National Park Service (NPS), and the California Native Plant Society planted the spineflower in four plots in the park, where it is slowly gaining ground.

COASTAL CLIFFS AND DUNES

The granite coastal cliffs at Point Reyes are surprisingly resistant to the ocean's battering, yet like coastal dunes, they are not a particularly hospitable environment for plants. The few plants that survive in these harsh oceanside conditions have certain characteristics that help them counter the dehydrating effects of strong winds, salt air, and low precipitation: their succulent leaves store water, and a ground-hugging growth pattern protects them from the elements. Plants that live on the cliffs seek out protected crevices, where they find some accumulation of soil and rainwater, and shelter from the wind. The only moderate condition in their environment is temperature, which provides a year-round growing season for coastal-strand plants, most of which are perennials.

Two fleshy-leaved, moisture-storing plants that peek from cliffside crannies are **live-forever** (genus *Dudleya*) and **stonecrop** (genus *Sedum*). The yellow-flowering **lizard tail** (*Eriophyllum staechadifolium*) is also common on Point Reyes cliffs. A nonnative that has become almost ubiquitous on California's coastal bluffs is **ice plant** (*Mesembryanthemum*). Introduced from South Africa, ice plant invades bluffs and dunes, reducing plant diversity by discouraging native plants and increasing the salt content in the soil.

On coastal dunes at Point Reyes and northward along the California coast, beach grass predominates. The most common grass at Point Reyes, **European beach grass** (*Ammophila arenaria*), native to the Mediterranean, was first introduced on the Pacific Coast in Golden Gate Park in the 1890s as a dune stabilizer. The beach grass quickly overran the native **American dune grass** (*Elymus mollis*), limiting the growth of native plant species and restricting burrowing places for animals. The underground roots (rhizomes) of beach grass and American dune grass stabilize the dunes, creating a foredune that keeps the sand from advancing and shelters the plants just inland.

On the lower beach, beach grass, sand verbena, and sea rocket are among the few plants that live nearest the ocean. Behind the foredune, a greater variety of plants benefits from the protection the dunes provide. **Dune lupine** (*Lupinus chamissonis*)—low-growing and long-blooming, with fragrant flowers and silvery foliage—and **coyote bush** (often of a prostrate variety with small leaves) predominate. They are joined on the sandy mounds by trailing strands of **beach morning glory** (*Calystegia soldanella*), **sand verbena** (*Ambronia umbellata*), **coast buckwheat** (*Eriogonum latifolium*), **seaside daisy** (*Erigeron glaucus*), and **beach strawberry** (*Fragaria chiloensis*).

MARSHLANDS

A great range of plants and animals make their home in marshlands, one of the most diverse habitats at Point Reyes. As human activities have altered traditional

boundaries between salt, brackish, and freshwater areas, much of the marshland on the peninsula has been lost and flow patterns changed. Early ranchers and settlers restricted tidal influences with roads, culverts, and levees to create more pastureland. The levee road between Point Reyes Station and Inverness Park isolated what is today the freshwater Olema Marsh from what was once a brackish extension of Tomales Bay. In the 1940s, land at the southern end of Tomales Bay was turned into pastureland; the NPS acquired the land in 2000 and restored the wetland habitat (see page 86).

The shores of **Tomales Bay, Bolinas Lagoon,** and **Drakes and Limantour Esteros** comprise the peninsula's 1,000 acres of salt marsh. Plants in the marshes are

DUNE RESTORATION AT ABBOTTS LAGOON

The dunes of Point Reyes' Great Beach support a rich yet vulnerable ecosystem. This sandy environment is home to 11 federally listed endangered plant and animal species—including the snowy plover—all threatened by the spread of invasive plant species. (See page 168 to find out more about snowy plovers.) Dense mats of European beachgrass and ice plant crowd out native plants and reduce nesting and foraging area for animals. In 2001, the NPS began a project that targeted a stretch of the Great Beach near Abbotts Lagoon—the most extensive native dune habitat in the park and a popular spot for bird-watchers, beachgoers, and wildflower seekers.

Ecosystems are in constant flux, so when the subject of habitat restoration comes up, many people ask, "restoration to what?" Over the last couple of centuries, humans have planted invasive plants, introduced nonnative animals, logged forests, and dammed lakes, all intending to improve on nature. Too often, doing so has damaged natural ecological processes. Restoration seeks to recover natural systems and the biodiversity they create, and to restore sustainable processes to the ecosystem.

For restoration projects at Point Reyes, the park carefully chooses the targeted sites. Areas with well-defined boundaries offer the best hopes of truly eradicating invasive species. In the relatively contained area around Abbotts Lagoon, the dune restoration project aimed to establish an environment in which snowy plovers, endangered lupine, layia, and American dunegrass all coexist, unthreatened by the spread of European beachgrass and ice plant.

Restoration work itself is dirty and back-breaking: laborers dig several feet in the sand to reach the tough roots of grasses and ice plant. It is always a long-term proposition. Nevertheless, on the dunes behind the Great Beach, native plants have begun to take hold and spread over the sandy hillocks. In 2018, monitors found that restoration near Abbotts Lagoon has been wildly successful: tens of thousands of the federally endangered **beach layia** (*Layia carnosa*), a tiny member of the sunflower family, were growing in the restored dunes. **Tidestrom's lupine** (*Lupinus tidestromii*), another endangered species, has also returned in force to the dunes around Abbotts Lagoon.

distributed according to how much saltwater exposure they can withstand. **Pickleweed** (*Salicornia virginica*) and **saltgrass** (*Distichlis spicata*) grow close to the coast, in water with a high saline content. Where fresh water gains influence, **sea thrift** (*Armeria maritima*) and **alkali heath** (*Frankenia salina*) appear.

In freshwater marshes, sedges, rushes, alder, and willows take over. **Olema Marsh** is the most extensive freshwater marsh at Point Reyes and one of the largest in Marin County. The upper reaches of Abbotts Lagoon, Drakes and Limantour Esteros, and Kehoe Marsh also host freshwater species, including **bog lupine** (*Lupinus polyphyllus*), **seep monkeyflower** (*Mimulus guttatus*), and various **rushes** (genus *Juncus*).

INTERTIDAL COMMUNITY

The shoreline zone between the high and low water marks is called the intertidal community, habitat for an array of marine plants, from giant kelps to microscopic algae. What we call seaweeds are a type of green, brown, or red algae, although the color we see is not necessarily related to the algal classification. Algae are plants, but they lack true flowers, leaves, and roots, and they reproduce with spores.

Where each type of algae grows within the intertidal zone is dictated by the amount of air it is exposed to—or how often the tide covers it. The plants in the splash zone—on rocky shores—tolerate prolonged periods without water; those that live in the lower and subtidal zones need less sunlight and are not disturbed by wave action.

In Point Reyes, you can look for seaweeds along the beaches, especially offshore of **Sculptured** and **Kehoe Beaches,** as well as near the mouths of **Drakes** and **Limantour Esteros.**

Animals

LAND ANIMALS

The Point Reyes grasslands, forests, and seashore once teemed with animals. Grizzly bears, mountain lions, and coyote roamed the hills, salmon and trout swam the bays and streams, and deer and tule elk grazed the prairie. The animals provided Coast Miwok with a rich food supply for thousands of years. Many of these species persist, and you will likely encounter them as you hike Point Reyes trails and walk its beaches.

For nearly two centuries now, another species has grazed the peninsula's grasslands, also highly valued as a food source: **cows.** First longhorn and then dairy cattle were introduced to the peninsula; today, both dairy and beef cattle remain.

Tule elk graze near the Tomales Point Trail.

After a 100-year hiatus, the NPS reintroduced **tule elk** to their native range at Point Reyes with great success. Three species of deer live on the peninsula: **black-tailed** or **mule deer,** native to the area, were hunted intensely a century ago and today compete with tule elk for forage; **fallow deer,** native to the Mediterranean and Asia Minor (Turkey), and **axis deer,** native to India, were both introduced to the peninsula in the mid-1900s. Some fallow deer are white in color, often an uncanny sight on Point Reyes hillsides.

BEARS AT POINT REYES

The **grizzly bear,** an icon of Yellowstone and the interior West, once also roamed coastal California in abundance. The wealth of food sources at Point Reyes—berries, nuts, and fish—provided grizzly bears with a year-round feast. In the 1800s, these predators became prey, as early settlers and gold miners shot grizzlies for sport and to protect livestock. The last grizzly in Marin County was shot in the 1880s.

Although **black bears** don't usually share grizzly habitat, preferring forest to the grizzly's open range, historical documents record a few sightings of black bears in wooded areas of the peninsula like Inverness Ridge. With the grizzly bear long extinct in California, more and more black bears have turned up near the coast. The first confirmed sighting in Point Reyes in over a century was in 2003, when a black bear was found rummaging in the trash at the Point Reyes Hostel and subsequently visited nearby areas. Since then, bears and their excrement have been sighted several times, most recently in 2021 along the Coast Trail, again near the hostel. While bears have also been seen on Mount Tamalpais and elsewhere in West Marin several times in the past couple of decades, it still remains to be seen whether these are only sporadic appearances or whether they herald the return of the species.

Bobcats and **mountain lions** both rove the peninsula, preying on rodents and rabbits in the case of the smaller bobcat, while mountain lions eat deer, skunks, raccoons, and even bobcats. Visitors to the peninsula stand a good chance of seeing a bobcat, but they rarely glimpse the more elusive mountain lion.

The small **gray fox** darts along trails and through low bushes and grasses. With its gray back and reddish legs, this fox is often mistaken for the **red fox,** a less-common resident of the peninsula. Foxes feed mostly on rodents, insects, berries, and grasses. The **coyote,** once common at Point Reyes, now rarely visits the peninsula, although it frustrates sheep ranchers in West Marin by preying on their herds.

Small **cottontail** or **brush rabbits** frequently scamper across trails, seeking refuge in the dense cover of chaparral and coastal scrub. Resembling jackrabbits, **black-tailed hares** spring about on long, strong hind legs that allow them to move quickly and avoid predators.

AQUATIC ANIMALS

The cold-water upwelling that occurs off the California coast in spring and summer creates one of the most productive and diverse marine habitats in the entire world. A vast supply of small organisms like krill and algae flourish in the nutrient-rich water and draw mammals, fish, and seabirds. Within a relatively small area, a complete range of marine habitats thrive, from deep ocean to estuarine and intertidal, and support a remarkable variety of plants and animals. The largest concentration of breeding seabirds in the United States, 36 marine mammal species, and 20% of California's breeding population of harbor seals all depend on these waters.

A harem of harbor seals at South Beach

Matt Lau/National Park Service

Visitors to Point Reyes National Seashore experience this rich marine environment as they view the abundance of marine mammals and seabirds that pass by or stop over in the seashore—to feed, mate, or give birth—at some point during the year.

Sanctuaries for Sea Life

The offshore waters around Point Reyes support some of the most diverse marine life in the world. They also sustain a number of commercial fisheries and some of the West Coast's heaviest shipping traffic. To protect the marine environment, in 1981 Congress designated 948 square miles off the coast as the **Gulf of the Farallones National Marine Sanctuary** (now the **Greater Farallones National Marine Sanctuary**), encompassing the waters from Stinson Beach to Bodega Bay, including the Farallon Islands, Tomales Bay, and Bolinas Lagoon. Sanctuary status precludes drilling and mineral exploration and other activities damaging to the health of the marine ecosystem, although it provides no protection against oil spills from tankers outside its boundaries.

About 20 miles offshore from the Point Reyes Lighthouse, at the edge of the Continental Shelf, an underwater island called **Cordell Bank** sits on the tip of a long granite peninsula. Deep water surrounds the islands' peaks and valleys on three sides. **Cordell Bank National Marine Sanctuary,** established in 1989, protects the submerged island and 526 square miles around it.

After a close call with extinction and a long absence from Point Reyes, **elephant seals** once again visit and breed on these beaches. The Elephant Seal Overlook and the Lifeboat Station at Chimney Rock, and the South Beach Overlook near the lighthouse are all good places to look for elephant seals from late November through early March. (See page 156 for more information about these intriguing animals.)

The largest concentration of **harbor seals** in California gathers along the Point Reyes shoreline and feeds in the offshore waters. You'll likely see their torpedo-shaped bodies on tidal flats near Drakes Estero, Limantour Spit, and Double Point. (See page 142 for more information about harbor seals.) **California sea lions** breed, feed, and bark loudly on offshore rocks at Point Reyes, the northern tip of their breeding grounds. Sometimes confused with harbor seals, sea lions can be distinguished by their external ear flaps. They move about on land more easily than seals because they can rotate their pelvis and use their back flippers to propel themselves.

The most commonly sighted cetaceans at Point Reyes are **gray whales** on their annual migration between feeding grounds in Alaska and breeding sites in Baja. (See page 76 for more about gray whales and whale-watching.) **Blue and humpback whales** also travel along the coast, farther from land than gray whales.

You're less likely to see them, but to picture their size, imagine three school buses lined up end to end. The average blue whale—the largest animal on Earth—is about 70–90 feet long.

Several species of **dolphins** and **porpoises** live in the waters off Point Reyes; watch for their graceful, arcing bodies as you scan the ocean for whales.

For more information about marine mammals, check out the interpretive programs at the **Point Reyes Lighthouse,** and visit the **Elephant Seal Overlook** at Chimney Rock (see page 156). You can also contact **Cordell Bank National Marine Sanctuary** (cordellbank.noaa.gov), **Greater Farallones National Marine Sanctuary** (farallones.noaa.gov), or **The Marine Mammal Center** at the Marin Headlands (marinemammalcenter.org).

BIRDS

Over 490 bird species—close to 45% of all bird species in North America—visit the Point Reyes Peninsula each year, drawing human visitors from all over the world to behold their profusion and diversity. The varied habitats at Point Reyes attract a wide range of bird species that don't usually gather in one location. The temperate climate makes a good breeding and wintering spot for migrants. Rarities find their way to Point Reyes' coastal location with surprising frequency, so not only are you likely to see a great many birds here, but you stand a good chance of sighting birds not common to the Bay Area.

Each season brings a different grouping of birds to Point Reyes, according to annual cycles of food sources and migration and breeding patterns. The migratory seasons, traditionally fall and spring, extend almost year-round at Point Reyes as hummingbirds return from Mexico in February and Arctic birds arrive in August on an early start to their journey. But migration accelerates in fall and spring, and these months are the most active, as geese, loons, pelicans, warblers, and many more stop off on the peninsula. In summer, when the days are longest and food is abundant, Point Reyes is a breeding ground for more than 100 species of birds. In winter, shorebirds and seabirds flock to the shorelines, mudflats, and bays of Point Reyes, and landbirds head to the forests to feast on berries and acorns. Raptors search for small rodents in grasslands and coastal scrub.

For the best birding spots in the Point Reyes area, and some of the birds you're likely to see on and around the peninsula, see page 78.

(continued on page 38)

COHO SALMON AND STEELHEAD TROUT RESTORATION

When rains begin to fill West Marin creeks in early winter, you have a good chance of sighting coho salmon and steelhead trout on their way upstream to spawn, thanks to restoration projects at Point Reyes National Seashore and nearby watersheds. Until a few decades ago, West Marin creeks, like others up and down coastal California, teemed with coho salmon and steelhead trout. Grizzly bears feasted on the abundant fish, and Coast Miwok people celebrated their arrival each winter. But the coho and steelhead population in West Marin has dropped dramatically since the 1940s, and statewide about 94% fewer fish swim in California's rivers, streams, and ocean. It's no mystery why the population has declined so much in the past several decades: most injurious have been the dams that block migratory paths, and the logging, construction, and poor agricultural practices that send sediment into streams. Less detrimental, but certainly not helpful, are overfishing and genetic intermixing with hatchery-raised fish, which weakens the survival abilities of wild coho and steelhead. Add the unpredictable natural fluctuations like floods, droughts, and ocean conditions to these human-driven impacts and you have two species that need quite a bit of help to regain a healthy habitat.

Restoration Programs

At Point Reyes, the proximity of agricultural and national park lands often makes decisions about land use and practice difficult. When coho salmon and steelhead trout were listed as threatened species in the 1990s, the NPS designed a restoration program to research habitat conditions and monitor fish populations. The NPS scientists and staff collaborated with landowners, school groups, and volunteers to gather data about fish numbers and learn about their habitat. The program instilled a deeper awareness and understanding of the riparian ecosystem and provided information that the park and its collaborators put to use to improve the ecosystem, and thus enhance fish habitat. The **Salmon Protection and Watershed Network (SPAWN)** and the **Marin Municipal Water District** have ongoing monitoring and restoration projects to improve salmon habitat and restore fisheries in Marin. Check out their work at seaturtles.org/our-work/our-programs/salmon and marinwater.org/fisheries.

Water level is key to the survival of salmon and steelhead fry (recently hatched fish) through the summer after their birth, but farms and ranches in the area also depend on water to nourish their crops. Fish and organic lettuce compete for water during the summer low-flow season. Meeting the needs of both agriculture and fish is one major challenge of the restoration program, especially in Pine Gulch Creek in Olema Valley. By working with the organic farmers who

operate in the watershed, the program successfully implemented innovative water-management practices that provide water for crops as well as salmon.

In addition to water flow, other elements of a healthy riparian ecosystem are gravel stream bottoms (fish survive better there than in streams with sandy bottoms) and plenty of leafy branches extending over the water (bugs drop from the leaves into the water and the waiting mouths of fish). Park staff and volunteers planted willows along stream courses, helping to reduce erosion and sediment accumulation and providing foliage cover.

Life Cycle

Coho salmon are anadromous fish, spending most of their lives in the sea but returning to freshwater streams to give birth. They hatch in freshwater creeks and migrate to the ocean after about a year. Toward the end of their three-year life cycle, their powerful olfactory sense guides the salmon back to their natal watershed.

As they make their way upstream to spawn, females take on a bronze cast while male salmon turn dark red and develop an enlarged, hook-shaped upper jaw. Their bodies become tattered and scratched. Females lay their eggs in small depressions, or redds, that they create in the gravel on the stream bottom. Males fight each other to establish dominance, and the victor fertilizes the eggs.

Salmon reproduce only once in their lifetime; they give up feeding during spawning and devote all their energy to reproduction. After salmon spawn, they die. Some live only 24 hours in fresh water; at most, they spawn 21 days after entering the stream. The new generation of fish hatched from the fertilized eggs will supply food for wildlife and humans; however, the death of the parent fish is perhaps an even more important contribution to the ecosystem. A vital step in the natural cycle, their death allows the survival of other plants and animals: the weakened salmon and their decomposing bodies provide food for animals and release nitrogen for plants. They even nourish their own offspring, which feed on the mayflies and other insects that lay their eggs on the carcasses of the parents.

For humans, the life cycle of coho salmon—their powerful sense of smell, their return to their natal watershed, and their self-sacrificing reproduction—can take on a mythic quality. Although their life cycle differs from that of coho, steelhead trout are also anadromous fish, migrating from freshwater river to ocean and back to river to give birth. Unlike coho, steelhead make several journeys upstream in their lifetime.

The most accessible viewing sites are outside of the national seashore. See the section on **Samuel P. Taylor State Park** (page 219) for specifics on several good salmon-viewing sites in the park.

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Fire

AS IT WAS IN MOST OF CALIFORNIA, fire was an integral part of the Point Reyes landscape before Europeans arrived. Coast Miwok people used fire to keep shrubs from encroaching on grasslands, so they could more readily find and dig up bulbs, and to improve seed harvests; they also burned the undergrowth around oak trees to make it easier to gather acorns. Early ranchers continued burning practices to manage their pasturelands. In the 20th century, ideas about fire began to change; fire management agencies began to prioritize suppression, and fires that ignited naturally were put out as soon as possible. Only four large fires burned in the 20th century in the Point Reyes area, one of which was the 1995 Vision Fire (see next section).

Scientists now better understand the important role of fire in the landscape: not only is it an effective tool for managing the land, but it is also healthy for the ecosystem. In addition to reducing fuel loads in order to lower the intensity of future burns, fire is part of an ecosystem's natural cycle of life and regeneration. Fire complements photosynthesis, in which plants use energy from the sun to convert basic chemical

The smoldering remains of the Woodward Fire

elements—water and carbon dioxide—into new cells. Fire returns this energy back into the atmosphere in the form of smoke, heat, and steam. Additionally, it allows new plants to establish themselves by clearing the land of vegetation and opening the understory to sunlight. Ash from tree litter and other organic debris become fertilizer for seedlings. Fire also prompts the regeneration of species that depend on the heat of a blaze to reproduce.

Despite their ecological benefits, wildland fires in areas like Point Reyes—near residential communities and important historical and cultural resources—bring concern about human and animal safety, damage to property, and smoke impacts in nearby highly populated areas. Neighborhoods adjacent to open-space lands and with narrow, tree-lined, winding streets, like those on Inverness Ridge and in Bolinas, are at great risk in the event of a wildfire. Fire management in Point Reyes National Seashore focuses on fuel reduction around the park, near boundaries with neighboring communities, and protection of park facilities and infrastructure, as well as ensuring good evacuation routes for park residents and neighbors, and safe routes for firefighters to access potential fires.

Because of Point Reyes' relatively small area and its proximity to communities, the seashore's management policy is to suppress fires immediately rather than let them burn. Even so, scientists believe that the two most recent fires in Point Reyes, in 1995 and 2020, likely had positive ecological effects on the park's habitats.

THE VISION FIRE

On September 30, 1995, a group of boys made an illegal campfire in the bishop pine forest on the western slope of Inverness Ridge. The boys extinguished the fire before they left, but its embers retained their heat and smoldered for several days. By the afternoon of October 3, a fire apparently had spread beneath thick duff to the roots of a nearby tree, and the tree burst into flames.

Initially, firefighters successfully contained the fire to a small area, but strong, gusty winds quickly spread the burning embers to dense and flammable vegetation. Several spot fires began around the original fire, and hot weather, low humidity, and the high winds catapulted it into an intense firestorm. At its height, the fire reached up to 3,000°F and consumed an acre every 5 seconds.

The fire swept through the bishop pine forest on Inverness Ridge, jumping from one tree crown to the next, leaving virtually no tree untouched. It quickly reached a heavily vegetated residential neighborhood on the ridge where narrow, tree-lined roads made it difficult for firefighters to reach the homes and for residents to evacuate. Within the first 24 hours after the fire was reported, 45 homes had burned.

By the second day of the fire, it had swept over the ridge and down the coastal slope. The dense vegetation and thick debris that had accumulated on the forest floor over nearly a century without fire fueled the blaze, and winds of 40–50 miles per hour propelled the flames across firebreaks and over the coastal hillsides to the ocean. Then the winds changed direction, and the fire moved back up the slope, expanding to the north and south as it went. Firefighters had established firebreaks along several trails, and had hoped to stop the blaze at Limantour Road, but ultimately it was the natural barriers of the ocean and the esteros that were most effective in stopping the fire.

After firefighters declared the fire 100% contained on the evening of October 7, it flared up again, and they remained on the scene for another week. In the end, the fire had consumed 12,354 acres—15% of Point Reyes National Seashore—45 homes on Inverness Ridge, and three other structures. More than 2,000 firefighters, nearly half of them inmates from correctional institutions, came from all over the state to fight the fire. Not a single person was injured or killed in the fire or firefighting efforts. The fire cost $6.4 million for suppression and at least $50 million in property damage.

Vision Fire Aftermath

Once the Vision Fire was contained, the story of the fire had only just begun. The aftermath of the fire—research about its effects on the park and on plants and

Cleanup following the Vision Fire

animals, as well as changes in fire management—continues years later. The Vision Fire caused devastating losses, but it is also a story of rebirth and regeneration.

As fire sweeps through forest and brushlands, it primes the ecosystem for regeneration. Fire causes old, dead foliage, as well as newly burned plants, to release nutrients and return them to the soil. It promotes new growth by clearing the ground of duff and debris, reducing competition from other plants, and allowing sunlight to reach seedlings. Other than in the bishop pine forest on Inverness Ridge, where the fire burned the hottest, most of the Vision Fire was of low intensity and benefited the plants and animals.

Bishop pine forests are especially well adapted to fire. In fact, these closed-cone trees depend on fire for survival. Their cones are sealed by a thick resin, which melts and releases the seeds only with intense heat. Once released, bishop pine seedlings quickly germinate and thrive in the cleared, mineral-rich soil. Because they burn in large stands and depend on fire as their sole means of regeneration, most bishop pines in one forest are about the same age, all having taken hold after the last burn. Without fire to regenerate the bishop pine forest, it would eventually die out after about 120 years, having no means of releasing new seedlings. On Inverness Ridge and across the coastal slope, masses of seedlings sprouted beneath the burned trees in the months following the Vision Fire.

The soil's supply of nitrogen—an essential nutrient for plants—vaporizes during a fire. In the carefully orchestrated natural cycle, the first postfire plants to appear are nitrogen-fixing plants—that is, plants that can turn nitrogen in the air into a water-soluble substance that plants can easily absorb. One such plant is lotus, a ground cover that took hold after the fire in vast carpets. Following lotus, lupine appeared in abundance, and then ceanothus. By the next spring, the burn area was covered in green new growth.

Biologists were primarily concerned about the Vision Fire's effect on animals; however, the burn area buzzed with activity after the fire. Many animals instinctively protect themselves from fire: some leave the area at the first hint of smoke, and others congregate in wet riparian areas that burn less intensely or not at all. Burrowing animals, even those that dig just a few inches beneath the soil, are often sheltered from fire. Salamanders bury themselves underground in the fall, so the Point Reyes population survived the fire well. Red-legged frogs also survived the burn.

Researchers discovered that after the fire, more birds gathered in riparian patches within the burn area than at unburned sites, and species from habitats as diverse as coastal scrub, bishop pine forest, and marshland all convened in the same protected areas. The year just after the fire, more baby birds hatched in the burn area than

anywhere else in the park. The thick new growth, low to the ground, created ideal nesting habitat. Animals that feast on seeds, along with predatory animals, often flock to postburn areas.

One of the few animals that suffered in the aftermath of the fire was the **Point Reyes mountain beaver.** This primitive rodent (*Aplodontia rufa phaea*), about the size of a muskrat, is a subspecies of mountain beaver that lives almost exclusively in Point Reyes and burrows in shaded thickets of vegetation. Mature stands of coyote brush—which the beaver feeds on along with plants such as sword and bracken fern, cow parsnip, stinging nettle, and poison oak—provide just the right living conditions, but the vigorous postburn growth of blue-blossom ceanothus decreased the kinds of vegetation the beavers typically eat. (Mountain beavers have primitive kidneys that are inefficient at retaining water; to compensate, they must consume one-third of their body weight in water each day, either by drinking it or eating moisture-rich plants.) Although the growth of blue-blossom ceanothus had slowed and the regrowth of coyote brush had increased a decade after the fire, scientists estimated that the number of mountain beaver burrows in the Point Reyes area had declined by nearly 50%.

The Woodward Fire

Twenty-five years after the Vision Fire, fire again swept through the Point Reyes landscape; some of the same areas that burned in the Vision Fire burned again in the Woodward Fire. On August 17, 2020, a lightning strike—unusual in this coastal landscape—started a fire near the intersection of the Coast and Woodward Valley Trails; the next day, another fire was discovered nearby. The dry vegetation, due to years of drought and low humidity, helped to spread the fire rapidly, and the original fire merged with another one that had started nearby. Firefighting resources were thin due to numerous lightning-sparked fires across the state, but firefighters established containment lines, set backfires, and were able to lift evacuation orders by September 3. The fire was declared contained on September 30, though flare-ups and smoldering continued throughout the next few months; it was not declared officially out until January 12, 2021.

The Woodward Fire burned almost 5,000 acres. Most of the fire area burned with low or moderate severity, snaking through the ground cover, without burning the oak, bay laurel, and Douglas-fir—only 8% burned with high severity. Coastal chaparral, like coyote brush and ceanothus, tends to burn intensely and regenerate quickly. In fact, like bishop pines, some ceanothus need fire to regenerate.

Because of the fire management policy at Point Reyes, firefighters actively suppressed the fire, building containment lines and dropping fire retardant, both of

Regeneration of coastal chaparral after the Woodward Fire

which had ecological impacts of their own. To minimize impacts, when possible, the team bulldozed lines in the same places as those made for the Vision Fire and didn't drop fire retardant over riparian areas to avoid damage to aquatic species. But containment activities always increase the possibility of the spread of invasive species and impacts on rare species. Shortly after the fire, park ecologists began monitoring the burn area for invasive species and developing plans for invasive plant management.

At press time in 2022, it is too early to know for sure what the long-term impacts of the Woodward Fire will be in the Point Reyes landscape. Biologists think that it is likely that the fire further harmed the mountain beaver population, which had already suffered in the Vision Fire; the northern spotted owl may have been affected as well. Park biologists will monitor both species to determine the impacts of the fire. But on the whole, scientists believe that the Woodward Fire was a positive ecological event for the Point Reyes landscape and helped to foster a diverse mosaic of habitat types in the seashore.

Chapter 3

HUMAN HISTORY

WHEN YOU WALK POINT REYES' TRAILS and paddle its waterways, you're following in the tracks of many who have come before you—Native Americans wore footpaths through the grasses and navigated fishing crafts in the bays, European galleons landed on the beaches and explorers traveled overland, and dairy ranchers reached their isolated outposts on rough roads and in small schooners. Knowing the rich cultural history of Point Reyes can help you understand and enjoy the landscape it has shaped.

The First Residents

BEFORE EUROPEAN EXPLORERS and settlers arrived on the Point Reyes Peninsula, Coast Miwok people lived on this land for thousands of years. According to the Coast Miwok Tribal Council of Marin, shellmounds date the history of the Miwok to 5,000 years ago, while oral histories date the lineage as twice as long. More than 100 villages, some with several hundred inhabitants, dotted the point's sloping mesas, the shores of Drakes Estero, and the hills across Tomales Bay. Archaeologists believe that more people inhabited the peninsula and the surrounding area in the 16th century than do in the 21st, living off the wealth of game, fish, and plants this fertile land supported.

Shellmounds near village sites contain bones, tools, shells, and baskets that reveal clues to how Coast Miwok people lived. With obsidian arrows, they hunted deer, elk, bear, and mountain lion; they used every part of the animals they killed—bones, antlers, muscle tendons, and furs—and fashioned tools out of natural materials. Bundled tule became building material for the shallow boats they used to fish for salmon, bass, herring, and rock cod in Tomales Bay. From the land, Coast Miwok people gathered acorns and supplemented their diet with hazelnuts, young greens, and bulbs. Mussels, clams, and an occasional marine mammal also provided nourishment.

Coast Miwok people had contact with nearby communities who spoke their language and also with other language groups who lived farther away; in complex

trade networks, they exchanged clam and abalone shells for goods that were not available on the coast, like obsidian, soapstone, and other raw materials.

Early Europeans

THE FIRST EUROPEANS TO SET FOOT on the Point Reyes Peninsula were most likely Francis Drake (he had not yet been knighted) and his crew in 1579, but Drake's precise landing site is at the center of a controversy that has aroused great passion over the years. Most historians believe Drake careened his ship the *Golden Hinde* at what is today called Drakes Bay for several weeks before returning to his native England. (See the following page for more about the Drake landing site and controversy.)

The first interaction between Europeans and Coast Miwok people was recorded in the diary of Francis Fletcher, the Drake expedition's chaplain. Fletcher described the Native people's reception as warm and welcoming—noting that the crew believed the Coast Miwok people thought they were gods. Today, however, ethnographers agree with Coast Miwok descendants that their ancestors believed the Englishmen were not deities, but rather ghosts of their ancestors returning to visit.

In the late 16th century, the Spanish government in Mexico sent many ships on trading expeditions to Asia, seeking luxuries such as silk, spices, and porcelain. Many such ships passed Point Reyes as they returned by way of the California coast, riding the north winds down to Mexico. In 1595, Sebastião Soromenho (Sebastián Cermeño in Spanish), a Portuguese captain commissioned by Spain, was en route from the Philippines to Mexico when fierce winds forced him to seek shelter. He anchored the *San Agustín,* a so-called Manila galleon loaded with precious cargo, in Drakes Bay and went ashore with most of his crew. A sudden storm swept in and wrecked the ship, which is thought to still be submerged in the bay.

Soromenho and his crew are thought to have spent about a month among the Coast Miwok before salvaging a small open launch and returning to Mexico. Had the *San Agustín* avoided that disastrous storm, and had Soromenho and his galleon continued down the coast, his place in history may well be quite different. Might he have been the first European to happen upon the San Francisco Bay, almost two centuries before Gaspar de Portolá's overland expedition?

A few years later, one of the survivors of Soromenho's treacherous return trip to Mexico, Sebastián Vizcaíno, made his way back up the California coast, mapping and naming many landforms along the way. Año Nuevo, south of San Francisco—known for the elephant seals that spend the winter months there—and Monterey are two of the names that remain today. Vizcaíno reached the waters off the peninsula

on January 6, 1603, Día de los Reyes (Day of the Three Kings), and thus recorded the point of land on the map as Punta de los Reyes.

The Missions

POINT REYES WAS PART OF THE SPANISH COLONY of Alta California, established in 1804, though Spaniards never settled the peninsula. The Franciscans built missions nearby, in San Francisco (1776), Sonoma (1823), and San Rafael (1817).They removed over two-thirds of the Coast Miwok people from their land around Tomales Bay and interned them in the missions; the Franciscans also baptized the Native people into the Catholic Church and forced them to serve as laborers. Prohibited from returning to their land and way of life, many Coast Miwok people contracted and died from European-introduced diseases, particularly smallpox, and from brutal mistreatment they endured in the missions.

SHARDS OF HISTORY

Thousands of shards of Chinese porcelain that washed up on the shore of Drakes Bay and were found in shellmounds on the peninsula expose evidence of European exploration at Point Reyes, as well as important information about the Coast Miwok people who lived there. Through comparisons with pieces from kilns in China, researchers have linked patterns, colors, and clay types to specific years in which they were made. In the late 1570s, when Drake likely landed at Point Reyes, most pottery was made of light clay, decorated with delicate patterns in deep cobalt. Shards of this type found in shellmounds on the peninsula were never immersed in water, and may be from the trunks that the Drake expedition diaries mention having left with Coast Miwok people—further evidence that Point Reyes was the site of the much-disputed Drake landing.

Some 20 years after Drake's landing, in the 1590s, China experienced a cobalt shortage; the patterns on exported porcelain were lighter blue in color and less delicate in design, and the clay was of a grayish tint. Archaeologists discovered shards of this characteristic pottery on the beaches of Drakes Bay. They probably washed ashore from Sebastião Soromenho's galleon the *San Agustín,* shipwrecked in the bay in 1595 and known to have carried hundreds of pieces of Ming Dynasty porcelain.

In addition to the clues about European exploration, archeologists have learned from the shellmounds about how the Coast Miwok people integrated objects from Europe and Asia into their cultural practices. For example, some archaeologists think that they used porcelain plates and bowls in food preparation, instead of the traditional baskets, and perhaps used fragments as tools, as an equivalent to obsidian. Others believe that the foreign objects were used in ceremonies and rituals, as objects symbolic of other worlds or perhaps of deceased ancestors. Both of these were ways the Coast Miwok people may have used new objects without any significant cultural transformation—that was to come over one century later, when the Spanish began to colonize Northern California.

In addition to the changes the missions brought for the Coast Miwok people, the missions' establishment also changed the environment of the Point Reyes area. They used the pasturelands east of Tomales Bay to graze cattle, whose hides and tallow were becoming valuable products in the global economy. Cattle began to change the landscape, as the animals ate the native grasses, compacted the soil, and spread invasive seedlings. Spaniards cultivated new plants that thrived in the grazed soil. Perhaps the greatest changes to the environment, however, resulted from the land-use practices that ceased when the Coast Miwok people were interned in the missions. Fire was an important land management technique that Native people used to improve the harvest of roots and other plants, disperse seeds across the landscape, and keep brush at bay. Without fire, brush thickened, trees began to take over the grasslands, nonnative species thrived, and wildlife increased. The net result was less diversity in animal and plant species.

While Indigenous people were devastated by the missions, written accounts from the time show that they were able to maintain some of their cultural practices, including hunting and gathering, mortuary rites, and dances. Oral stories and songs, passed down through generations, document the Coast Miwok people's struggle for survival and resistance after the arrival of Europeans. The continuation of these practices established the foundation for the resilience and persistence of Coast Miwok communities today.

Alta California

IN 1821, MEXICO WON INDEPENDENCE FROM SPAIN. For the next 27 years, until California became a territory of the United States, Mexico governed Alta California. During that time, the Californios—the Spanish-speaking upper class—introduced ranching in West Marin; longhorn cattle, used for their hides and tallow rather than their meat, roamed the grasslands. When Mexican civil authorities secularized Mission San Rafael, which had owned most of West Marin, the governors began to dole out large land grants to private citizens for cattle ranching. All of the land around Tomales Bay was privatized and granted to Mexican citizens—and later to American settlers. As a result, the Coast Miwok people who returned to the area after the missions period were no longer able to live off of its natural resources as they once had.

In 1848, the Treaty of Guadalupe Hidalgo ended the Mexican-American War but assured that property rights would remain with the Mexican landowners. With little documentation, however, proof of ownership was difficult to obtain, and land grants became entangled in complicated litigation. By the end of the 1850s, the San

Francisco law firm of two brothers, Oscar Shafter and James McMillan Shafter, who had represented several landowners in title cases, had acquired most of the Point Reyes Peninsula.

Meanwhile, California gained statehood in 1850—the same year the erroneously named Act for the Government and Protection of Indians was passed, allowing Native Americans to be forced into servitude, separating children from their families, and effectively legalizing the genocide of Native people. Many Coast Miwok people were killed or driven from the Tomales Bay area; those who remained lived in coves along the bay, working on local ranches and fishing in the bay for sustenance and as a way to participate in the market economy.

The Shafter Dairy Empire

AFTER THE SHAFTER BROTHERS acquired most of Point Reyes, they wasted no time in developing a huge dairy enterprise, which would soon become the largest in California. In the mid-1850s, a few families on the peninsula had successfully experimented with making dairy products on a small scale, but the Shafter brothers envisioned a prosperous dairy empire, thriving in the open grasslands and coastal climate of Point Reyes. The long distance to markets in San Francisco seemed an obstacle in those days, but the Shafter brothers foresaw that they could quickly transport cheese and butter to the city by schooner.

The location and climate of Point Reyes were key to the success of the dairy industry here. A visitor to the peninsula in the mid-1800s cited "the superior quality of the pasture—the land lying so near the sea, that the dews are heavy and constant, adding great luxuriance to the wild oats and other grains and grasses."

When Charles Webb Howard married Oscar Shafter's daughter Emma, he joined the family enterprise, and the three men divided the peninsula among themselves, into 33 ranches. Several ranchers were already grazing dairy cows on Point Reyes, and the Shafters initially signed new leases with them, creating a system of tenant dairy farms. Oscar Shafter and Charles Howard designated their ranches with a letter of the alphabet, from A Ranch at the tip of the headlands to Z Ranch on the summit of Mount Wittenberg. James Shafter chose names like Drakes Head and Muddy Hollow.

The 1848 Gold Rush brought droves of migrants to California, from the United States and abroad, most of whom were not destined to profit from the precious metal. Many sought other means of making riches from California's natural resources. New arrivals from Ireland, Portugal's Azores Islands, and Switzerland became tenant farmers on the Shafters' Point Reyes ranches; many had raised cattle

References, Selected Readings, and Websites

HUMAN AND NATURAL HISTORY

Alt, David D., and Hyndman, Donald W. *Roadside Geology of Northern and Central California.* Missoula, MT: Mountain Press, 2000.

Avery, Christy. *Tomales Bay Environmental History and Historic Resource Study: Point Reyes National Seashore.* Seattle: National Park Service–Pacific West Region, US Department of the Interior, 2009. tinyurl.com/TomalesBayEnvironmentalHistory*.

Bakker, Elna. *An Island Called California: An Ecological Introduction to Its Natural Communities.* 2nd ed. Berkeley: University of California Press, 1985.

Evens, Jules C. *Natural History of the Point Reyes Peninsula.* California Natural History Guides. Berkeley: University of California Press, 2008.

Galloway, Alan J. *Geology of the Point Reyes Peninsula, Marin County, CA.* Bulletin 202. Sacramento: California Division of Mines and Geology, 1977. tinyurl.com/Point ReyesGeology*.

Gilliam, Harold. *Weather of the San Francisco Bay Region.* 2nd ed. Berkeley: University of California Press, 2002.

Griffin, J. Martin. *Saving the Marin-Sonoma Coast*. Healdsburg, CA: Sweetwater Springs Press, 1998. Out of print.

Hart, John. *Farming on the Edge: Saving Family Farms in Marin County, California.* Berkeley: University of California Press, 1991. Out of print.

Hill, Mary. *California Landscape: Origin and Evolution.* Berkeley: University of California Press, 1984. Out of print.

Howell, John Thomas. *Marin Flora: Manual of the Flowering Plants and Ferns of Marin County, California.* UC Press Voices Revived. Berkeley: University of California Press, 2021 (1949).

Livingston, Dewey S. *A Good Life: Dairy Farming in the Olema Valley: A History of the Dairy and Beef Ranches of the Olema Valley and Lagunitas Canyon.* San Francisco: National Park Service, US Department of the Interior, 1995. tinyurl.com/OlemaValleyFarming*.

*Free PDF available online

———. *Ranching on the Point Reyes Peninsula: A History of the Dairy and Beef Ranches Within Point Reyes National Seashore, 1834–1992.* Revised ed. San Francisco: National Park Service, US Department of the Interior, 1994. tinyurl.com/PointReyesRanching*.

Mason, Jack. *Point Reyes: The Solemn Land.* 3rd ed. Inverness, CA: North Shore Books, 1980. Out of print.

———. *Earthquake Bay: A History of Tomales Bay, California.* 2nd ed. Inverness, CA: North Shore Books, 1980. Out of print.

Watt, Laura Alice. *The Paradox of Preservation: Wilderness and Working Landscapes at Point Reyes National Seashore.* Berkeley: University of California Press, 2016.

GUIDEBOOKS

Arnot, Phil. *Point Reyes: Secret Places and Magic Moments.* 3rd ed. San Carlos, CA: Wide World Publishing, 1993. Out of print.

Byers, Elizabeth, and Jean Rusmore. *Bay Area Ridge Trail.* 4th ed. Birmingham, AL: Wilderness Press, 2019.

Huber, Jane. *60 Hikes Within 60 Miles: San Francisco.* 4th ed. Birmingham, AL: Menasha Ridge Press, 2020.

Martin, Don and Kay. *Point Reyes National Seashore: A Hiking and Nature Guide.* San Anselmo, CA: Martin Press, 1992. Out of print.

Whitnah, Dorothy. *Point Reyes: A Guide to the Trails, Roads, Beaches, Campgrounds, and Lakes of Point Reyes National Seashore.* 3rd ed. Berkeley: Wilderness Press, 1997. Out of print.

MAPS

See tinyurl.com/PRNSMaps and npmaps.com/point-reyes for links to **Point Reyes National Seashore/National Park Service** maps and the official NPS mobile app.

Bay Area Trail Map: Point Reyes. 2nd ed. Santa Clara, CA: Redwood Hikes Press, 2022.

Point Reyes National Seashore and West Marin Parklands Recreation Map. Berkeley: Wilderness Press, 2007.

Point Reyes National Seashore. Revised ed. San Rafael, CA: Tom Harrison Maps, 2021.

Trails of Mt. Tamalpais, Muir Woods, and the Marin Headlands. 2nd ed. San Francisco: Pease Press, 2019.

Trails of West Marin. Revised ed. San Francisco: Pease Press, 2021.

WEBSITES

National Park Service (NPS)

Point Reyes National Seashore (PRNS) nps.gov/pore

Camping information (PRNS and vicinity) tinyurl.com/PointReyesCampgrounds, tinyurl.com/PRNSNearbyCampgrounds

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National Park Service (NPS) (*continued*)

Point Reyes National Seashore (PRNS) ***(continued)***

PRNS General Management Plan tinyurl.com/PointReyesGMP

Golden Gate National Recreation Area nps.gov/goga

NPS History Electronic Library and Archive npshistory.com

Point Reyes National Seashore Association ptreyes.org

State and Local Parks

Marin County Parks parks.marincounty.org

Samuel P. Taylor State Park tinyurl.com/SamuelPTaylorSP

Tomales Bay State Park tinyurl.com/TomalesBaySP

Conservation, Environment, Nature, and Wildlife

Audubon Canyon Ranch egret.org

Calflora (California wild-plants database) calflora.org

California Department of Fish and Wildlife wildlife.ca.gov

California Office of Environmental Health Hazard Assessment oehha.ca.gov

Cordell Bank National Marine Sanctuary cordellbank.noaa.gov

Greater Farallones National Marine Sanctuary farallones.noaa.gov

Leave No Trace lnt.org

Marin County Environmental Health Services marin.org/ehs

The Marine Mammal Center marinemammalcenter.org

Point Blue Conservation Science pointblue.org

Indigenous Tribes and Advocacy

Alliance for Felix Cove alliance4felixcove.org

Coast Miwok Tribal Council of Marin coastmiwokofmarin.org

Federated Indians of the Graton Rancheria gratonrancheria.com

Visitor Information

Marin Convention & Visitors Bureau visitmarin.org

Point Reyes Lodging ptreyes.com

West Marin Chamber of Commerce pointreyes.org

Weather

National Weather Service Forecasts forecast.weather.gov

NOAA Tides and Currents tidesandcurrents.noaa.gov (click on "Tide Predictions," then enter "Point Reyes" in the search box)

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About the Author

Ann Lage

JESSICA LAGE lives in Berkeley with her family and has spent countless hours on the trails and beaches of West Marin since she was a kid. She is also the author of *Trail Runner's Guide: San Francisco Bay Area* (Wilderness Press). She has a PhD in geography from UC Berkeley and works as an independent researcher and writer.

"Lage is your Point Reyes base-camp guide, curating your trips to charming West Marin towns with delicious local food and memorable lodging. First-rate maps and up-to-date intel ensure you'll find the perfect excursion."

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