

### **EXECUTIVE SUMMARY**

California's beaches are essential public spaces that provide recreation, cultural connection, and economic benefits. However, these beaches are under growing pressure from sea level rise, coastal erosion, and development. Without proactive management, many will disappear by the end of the century.

Some communities will face these losses sooner than others. Access to the coast is already uneven, with historically underserved and inland communities traveling farther, navigating complex reservation systems, and encountering limited parking, restrooms, and beach safety services. These barriers can discourage visitation and deepen inequities in who can regularly enjoy the coast.

Protecting beaches is no longer a local issue. Sand movement, coastal access, and visitor use patterns all operate at regional scales. Effective management will require regional coordination, shared resources, and more inclusive planning that prioritizes public access and equity alongside environmental goals.

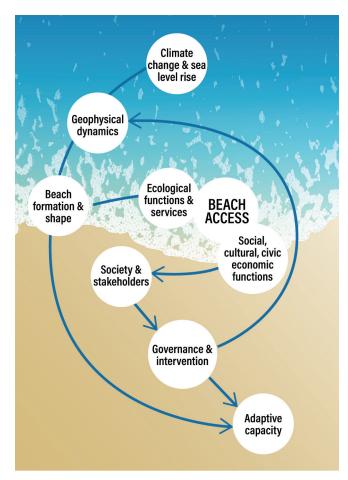
This report draws on findings from the Beach Sustainability Assessment — Comprehensive Analysis for Management Project (BSA-CAMP) to provide coastal managers, policymakers, and community leaders with practical strategies for sustaining beaches and expanding access in the face of climate change.

## **KEY TAKEAWAYS**

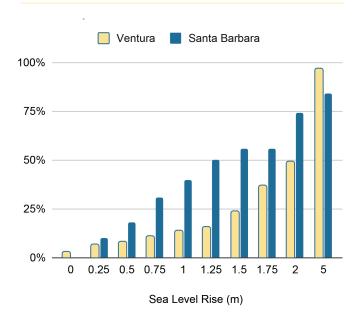
- 1. Beaches are in trouble. Sea level rise and development pressures are expected to cause widespread beach loss in California, especially in areas where coastal development prevents beaches from moving inland. Where the shoreline is hardened, erosion will likely accelerate. In places with space to retreat or where sediment supply is sustained, beaches may shift or change shape rather than fully disappear.
- 2. Management must be regional. Beach sustainability, sand management, and visitor access cannot be solved jurisdiction by jurisdiction; coordinated action across cities, counties, and agencies is essential.
- **3. Beach sustainability is complex.** Understanding it requires many kinds of science, including social sciences, and mixed method approaches to data.
- 4. Access must be equitable. Barriers such as limited parking, inadequate restrooms, safety concerns, and digital reservation systems continue to limit coastal access, particularly for low-income and historically excluded communities.

Access this PDF, plus methods, data, and technical citations here. https://arcg.is/0DGHrb0





**FIGURE 1.** Conceptual framework for sustaining California's beaches. Resilient beaches require coordinated action across four key systems: physical processes, social dynamics, economic factors, and governance structures.



**FIGURE 2.** Projected loss of beach access points in Santa Barbara and Ventura Counties with sea level rise. Projections suggest approximately 100 access points may be lost for each additional foot of sea level rise.

## THE CHALLENGE

## California's Beaches Are at Risk

Beaches are dynamic systems shaped by waves, sediment movement, and human activity. They depend on the steady delivery of sand, which flows through coastal cells called littoral cells. These systems can break down when rivers are dammed, coastal structures block sand, or sea level rise outpaces natural replenishment.

The Santa Barbara Littoral Cell, stretching from the Santa Maria River to Point Mugu, is the longest littoral cell in Southern California. It covers about 140 miles and includes nearly 100 beaches. This region is already experiencing faster erosion rates, more intense storms, and shrinking beaches. Without intervention, many access points will disappear, and entire beaches could be submerged.

Sea level rise is a direct threat to coastal access. As beaches narrow or vanish, parking lots, restrooms, and pathways will also be lost. Projections show that with six feet of sea level rise, more than half of California's current beach access points will be gone. For every additional foot of sea level rise, an estimated 100 more access points could be lost. This is not just a physical loss; it is a social and cultural one.

# **Beach Access Is Unequal**

Although California's beaches are legally public, access is not equal for all. Many inland and historically marginalized communities must travel farther and spend more to visit the coast. Transportation costs, limited low-cost lodging, and time constraints create real barriers.

Structural factors like restrictive zoning, coastal housing costs, and the legacy of exclusionary practices such as redlining continue to shape who can afford to live near the beach and who cannot. As a result, wealthier coastal communities enjoy more frequent and easier access.

Future losses will not be felt evenly. Crowding at remaining beaches is likely to increase, further limiting opportunities for visitors who already face barriers. Coastal managers will need to confront difficult decisions about which beaches can be preserved, how to prioritize access investments, and how to manage shrinking public spaces.

The **BSA-CAMP** project highlights that sustaining beaches is not just about preserving sand. It is also about sustaining access, cultural connections, and the opportunity for all Californians to benefit from the coast.



**FIGURE 3.** Study area of the Santa Barbara Littoral Cell, spanning from the Santa Maria River to Point Mugu. The map shows case study beaches, city and county jurisdictions, and key regional planning boundaries.

## **BARRIERS TO ACCESS**

# Physical and Infrastructure Barriers

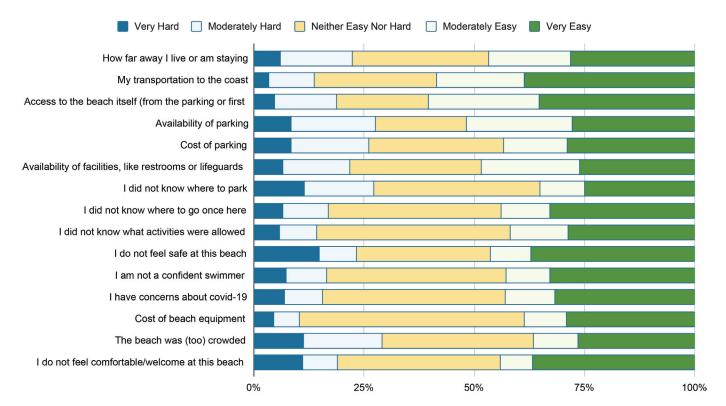
Across the Santa Barbara Littoral Cell, visitors consistently identified parking and restrooms as the most important factors when choosing a beach. When these are limited, expensive, or hard to find, many potential visitors, especially those traveling long distances, are discouraged from making the trip.

Parking is not just about cost. It is also about availability and information. Visitors frequently reported difficulty finding parking or knowing where it was located. When families arrive after a long drive only to find no accessible parking, they may leave or avoid returning to that beach in the future.

Restrooms are another critical barrier. Clean, open, and available restrooms can determine whether a beach is usable, particularly for families with children, older adults, and visitors with disabilities. When basic facilities are lacking, entire communities may feel excluded from the beach experience.

# **Economic and Social Barriers**

Longer travel distances, rising gas prices, and the high cost of overnight stays create significant financial barriers. Inland visitors often need to plan full-day or overnight trips to enjoy the coast, which increases both direct costs and logistical complexity.



**FIGURE 4.** Top reported barriers to beach access, based on survey results. Parking availability and safety access are the most significant barriers across communities; focus group results affirm these findings.

These challenges fall hardest on low-income households and historically underserved communities. Families living farther from the coast must invest more time, money, and effort to reach the beach. Some visitors limit their trips or stop going altogether when costs become too high.

Focus group participants also described social barriers, including concerns about beach safety. Many reported avoiding beaches with limited lifeguard presence, poor lighting, or areas they perceived as unsafe. For parents and caregivers, the absence of lifeguards increases anxiety and can prevent beach visits entirely.

# **Digital Barriers**

Many popular coastal campgrounds and parking areas now rely on digital reservation systems. For some visitors, these systems are difficult to use or require reliable internet access, which is not universally available. Focus group participants described frustration with confusing websites, fast-booking campgrounds, and limited support for users unfamiliar with digital tools. This issue, sometimes called "digital gentrification", disproportionately affects older adults, lower-income visitors, and those with limited internet skills.

# **Cultural and Psychological Barriers**

Some visitors described feeling out of place or unwelcome at certain beaches. Focus group narratives revealed that beach spaces sometimes feel exclusive, shaped by images, signage, and social cues that do not reflect the diversity of California's communities.

For first-generation visitors, the beach can also be a place of anxiety, whether due to unfamiliarity with swimming, concerns about personal safety, or a sense of not belonging. These barriers are often passed across generations but can also be actively challenged when families and schools make intentional efforts to bring children to the coast.

Accessibility for people with disabilities remains uneven. Visitors noted a need for more wheelchair-accessible pathways, beach mats, and signage that serves a wider range of physical and cognitive needs.

Together, these physical, economic, digital, and cultural barriers shape who can access the beach, how often they visit, and whether they feel safe and welcome when they arrive.



**FIGURE 5.** Erosion in Ventura, CA, threatens public access, parking, and public safety; a managed retreat project relying on nature-based solutions will increase access and parking.

## **SOLUTIONS AND MANAGEMENT STRATEGIES**

# Managing Beaches at the Right Scale

Beach sustainability cannot be managed city by city. Sand moves across jurisdictions, visitors travel across regions, and the challenges of shrinking beaches affect entire coastal systems. Effective beach management requires regional coordination that matches the scale of coastal processes.

Organizations like **BEACON** (the Beach Erosion Authority for Clean Oceans and Nourishment) in Santa Barbara and Ventura Counties and **SANDAG** (the San Diego Association of Governments) have demonstrated the potential for regional sediment management. These efforts coordinate beach nourishment, monitor coastal change, and link sediment supply to beach preservation. However, more consistent funding and broader collaboration are needed to fully align these programs with public access goals.

Regional governance can also help resolve resource conflicts and prioritize where limited sand and public investment should be directed. Not every beach can be saved, but coordinated strategies can protect high-use areas and critical access points.

# **Supporting Adaptation**

Sea level rise and beach erosion will continue. Managers must use a flexible mix of strategies, including:

- **Beach nourishment** and sediment management to sustain beach width
- **Dune restoration** and nature-based solutions to absorb wave energy
- **Strategic relocation** of parking, restrooms, and access pathways to higher ground
- Improved permitting and monitoring to allow timely, well-coordinated, regionally-integrated beach projects

While **managed retreat** remains politically difficult, other adaptive strategies (e.g. moving restrooms and parking lots inland) can preserve elements of public access even as shorelines shift.



**FIGURE 6.** Visitors to the Santa Barbara Littoral Cell beaches travel from across the region, including inland cities and neighboring counties. This map shows the primary home locations of surveyed beach visitors.

# **Modernizing Coastal Policy**

Local Coastal Programs (LCPs) are the main tool for managing development along the California coast. Many of these plans are outdated and do not fully account for sea level rise or growing visitor demand. Updating LCPs with stronger focus on equity, regional coordination, and climate adaptation will be essential.

The **California Coastal Commission, State Coastal Conservancy, and Ocean Protection Council** all have roles in supporting this work. New statewide initiatives can help fund Local Coastal Program updates that include specific access protections and resilience planning.

# Improving Access for All

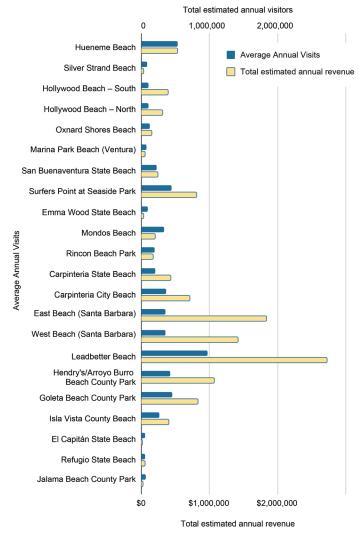
Improving beach access requires practical investments in the basics:

- More parking and restrooms
- Affordable overnight accommodations, including lowcost campgrounds and motels

- Better public transit options to the coast
- Enhanced beach safety, including more lifeguards and better lighting in parking lots.

Addressing **digital barriers** is also key. Reservation systems should be made more accessible, with simplified online tools, multilingual support, and options for inperson or phone-based bookings.

Cultural inclusion must remain a priority. Beach management should include diverse community voices, improve representation in signage and outreach, and actively support programming that welcomes visitors from all backgrounds.



**FIGURE 7.** Beach revenue and visitation patterns vary across locations. High-revenue beaches often generate more transient occupancy tax (TOT), while lower-revenue beaches can see higher visitation but produce less local tax income.



FIGURE 8. Rising sea levels increasingly threaten access, recreation, and infrastructure.

# **Funding the Future**

Beach management is costly, and some coastal cities generate more revenue than others. Santa Barbara's popular beaches, for example, produce significant hotel tax revenue, while other locations rely heavily on public investment to maintain access and facilities. A more equitable funding model is needed to support beaches that serve lower-income and inland visitors but have limited local revenue.

Regional funding agreements, climate adaptation bonds, and targeted state support can help ensure that public access is not sacrificed when local budgets are tight.

# Preserving California's Beaches for Future Generations

California's beaches are vital public spaces, but many are at risk. Sea level rise, coastal erosion, and growing development pressures threaten to reduce both beach size and the number of available access points. These changes will not impact all communities equally. Without deliberate, coordinated action, barriers to coastal access will grow, and existing inequities will deepen.

Sustaining beach access requires more than just protecting sand. It demands investment in public infrastructure, updates to coastal policies, and regional planning that

connects beaches across jurisdictions. Local governments, regional partnerships, and state agencies must work together to ensure that California's beaches remain open, welcoming, and accessible to all.

## The Beach Sustainability Assessment — Comprehensive Analysis for Management Project

highlights the urgent need for inclusive coastal management. Beaches are not just physical places; they are cultural spaces that shape family traditions, public health, and community identity. Preserving them requires solutions that balance environmental, social, and economic needs.

# **Looking Ahead**

California's beaches are facing a pivotal moment. The decisions made today about coastal access, climate adaptation, and regional planning will shape who can enjoy these spaces in the decades to come. A long-term, collaborative strategy that prioritizes public access, equity, and resilience is essential to preserving the coast for future generations.

California has the tools, knowledge, and partnerships to meet this challenge. What is needed now is collective commitment and sustained investment to ensure that beaches remain open and accessible to all.

### POLICY AND MANAGEMENT RECOMMENDATIONS

## 1. Protect and Expand Public Beach Access

- Prioritize protection of existing shoreline access points and develop new ones as sea level rise reduces available space.
- Invest in essential visitor infrastructure, including restrooms, parking, and affordable overnight accommodations like campgrounds.
- Improve public transit access to beaches and reduce parking fees where possible.

## 2. Address Key Barriers to Access

- Expand digital literacy programs and improve accessibility of online reservation systems, including in-person and multilingual options.
- Increase safety investments such as lifeguards, lighting, and safe beach pathways.
- Support inclusive outreach and beach programming that welcomes visitors from diverse communities.

## 3. Strengthen Regional Coastal Management

- Develop regional beach access planning frameworks at the scale of littoral cells.
- Establish intergovernmental task forces that include cities, counties, harbors, state agencies, and regional sediment management groups.
- Coordinate permitting, monitoring, and funding to align local and regional priorities.

## 4. Modernize Local Coastal Policies

- Update Local Coastal Programs (LCPs) to reflect sea level rise projections, regional visitor patterns, and inland heat impacts that increase coastal demand.
- Include equity and environmental justice as core planning principles.
- Align LCP updates with Coastal Regional Sediment Management Plans and leverage incentives like SB 272 to support timely revisions.

# 5. Expand Funding and Financial Equity

- Recognize that some beaches generate significant local tax revenue, while others rely more heavily on state and regional support.
- Create funding models that support lower-revenue beaches serving underserved communities.
- Explore revenue-sharing agreements, climate adaptation bonds, and expanded state grant programs to finance future adaptation and access improvements.

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