Case No. S221980

IN THE SUPREME COURT OF CALIFORNIA

BARBARA LYNCH and THOMAS FRICK,

~~Petitioners~~, Respondent

v.

CALIFORNIA COASTAL COMMISSION,

~~Respondent~~ Appellant

After a Decision by the Court of Appeal
Fourth Appellate District, Division One
Case No. D064120

Appeal from the San Diego County Superior Court
Case No. 37-2011-00058666-CU-WM-NC
The Honorable Earl H. Maas III, Judge

SURFRIDER FOUNDATION'S APPLICATION FOR LEAVE TO FILE *AMICUS CURIAE* BRIEF AND [PROPOSED] BRIEF IN SUPPORT OF ~~RESPONDENT~~ CALIFORNIA COASTAL COMMISSION

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TO THE HONORABLE CHIEF JUSTICE AND JUSTICES OF THE SUPREME COURT:

Pursuant to Rule 8.520(f) of the California Rules of Court, Surfrider Foundation ("Surfrider") respectfully requests leave to file the attached *amicus curiae* brief in support of Respondent California Coastal Commission.

HOW THIS BRIEF WILL ASSIST THE COURT

Surfrider's proposed *amicus* brief will assist the Court on the second question under review by addressing (1) the science of natural coastal erosion processes that lead to dynamic and healthy coastal beaches, (2) the impacts of coastal armoring on important recreational and ecological values associated with public tidelands and beaches, especially in the face of rising sea levels, and (3) the consistency of the permit reopener condition at issue here with the California Coastal Commission's common law, constitutional, and statutory obligations to protect public trust resources and public access to the coast. The party briefs do not fully address these issues, which are critical to understanding legal question before the Court. Accordingly, Surfrider offers its proposed *amicus* brief to provide background context that may be helpful to the Court's resolution of this matter.

STATEMENT OF INTEREST OF *AMICUS CURIAE*

Surfrider is a grassroots nonprofit organization headquartered in Orange County, California and dedicated to the protection and enjoyment of the world's oceans, waves and beaches through a powerful activist network. It has more than 250,000 supporters, activists, and members who live in the United States and over 80 local Chapters nationwide, including the volunteer-based San Diego Chapter.

Surfrider has a particular interest in the outcome of the present litigation, both because of the potential consequences from coastal armoring along California's shores which will inevitably lead to the loss of California's sandy beaches, and its interest in the Coastal Commission's ability to carry out its legal obligations to protect and maximize public beach access and recreational opportunities in California's coastal zone.

Surfrider has a specific interest in the beach in Encinitas, California, the center of this case's controversy. The heavily-used beach at Encinitas is beautiful, with its sandy beach, natural bluffs and cliffs, and waves that offer excellent surfing opportunities. Surfrider's members, supporters, and staff regularly use and enjoy the coastal resources located at the beach

in Encinitas, including but not limited to recreational resources in the near- shore waters, where they enjoy activities such as surfing, swimming, and standup paddling, and the sandy beach area, where they enjoy sunbathing, picnicking, walking or jogging, and observing the native plants and animals located there.

A core aspect of Surfrider's mission of protecting and enjoying our oceans, waves, and beaches is ensuring that its members and the public can continue to access and enjoy our beaches, including at Encinitas. A ruling against the Coastal Commission in this case would threaten future public access to, and enjoyment of, California beaches and tidelands by conveying on private property owners an absolute right to construct seawalls and other coastal armoring projects which obstruct the natural coastal process that sustain our beaches. If the Coastal Commission has no discretion to place conditions on coastal development permits to protect the recreational and ecological values of the state's beaches and tidelands in an era of rising sea level, the people of California will ultimately face the destruction and loss of sandy beaches and tidelands up and down the coast.

STATEMENT REGARDING PREPARATION OF BRIEF

No party or counsel in the pending case authored the propose *amicus curiae* brief in whole or in part, or made any monetary contribution intended to fund the preparation or submission of the brief. No person other than the proposed *Amici Curiae* made any monetary contribution intended to fund the preparation or submission of this brief.

REQUEST FOR LEAVE TO FILE

Because the decision of this Court will directly affect Surfrider, and because its proposed *amicus* brief brings a unique perspective to bear on this matter, Surfrider respectfully requests that the Court this amicus curiae brief.

DATED: Aug. 5, 2015 Respectfully submitted,

ENVIRONMENTAL LAW CLINIC
Mills Legal Clinic at Stanford Law School

By: 

Deborah A. Sivas

Attorneys for Prospective *Amici Curiae*
SURFRIDER FOUNDATION

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> "Seawalls damage virtually every beach they are built on. If they are built on eroding beaches—and they are rarely built anywhere else—they eventually destroy [the beach]."
>
> Cornelia Dean, *Against the Tide: The Battle for America's Beaches* at p. 53 (1999)[1]

INTRODUCTION

California's spectacular 1,100-mile shoreline of sandy beaches, steep cliffs, rocky headlands, and coastal lagoons may seem timeless, but in reality, it is a "battleground between land and sea."[2] Dynamic natural processes – waves, winds, and tides – continuously sculpt and re-sculpt the state's coastal landscape. Some 18,000 years ago, when the glaciers of the last ice age began melting and the seas began rising, the California coastline was five to fifteen miles west of where it lies today, and it has been steadily retreating landward ever since. Today, the state's

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[1] See also National Public Radio, The Diane Rehm Show, *Environmental Outlook: Disappearing Beaches* (aired Aug. 5, 2015), *available at* http://thedianerehmshow.org/shows/2015-08-05/environmental-outlook-disappearing-beaches (expert discussion and analysis of seawalls and sea level rise).

[2] Gary Griggs, et al, *Living with the Changing California Coast* 38 (2005) (hereafter "*Changing California Coast*"), partially *available at* https://books.google.com/books?id=Q9FGOsG3W6QC&printsec=frontcover&dq=gary+griggs&hl=en&sa=X&ved=0CB0Q6AEwAGoVChMI87iVm7OTxwIVDDiICh0dSgtd#v=onepage&q=gary%20griggs&f=false.

coastal bluffs are eroding at a rate of one foot per year in many places, and that number will likely increase over the coming decades as global warming accelerates sea-level rise and intensifies Pacific storms.[3]

Even as California's coastline continues to recede landward, however, sandy beaches can and do persist. As long as the natural processes that supply sand continue to operate, beaches will migrate landward with the eroding coastal cliffs and bluffs. But coastal armoring – in the form of manmade seawalls and other structures designed to combat routine erosion – disrupts these natural processes by essentially anchoring the dune or sea cliff in place. The impact of armoring on the beach below can be dramatic. Wave energy reflecting off a hardened surface scours the sand around a seawall, dissipating the beach and impeding public access along the shoreline. At the same

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[3] *See generally* Cal. Dep't of Boating and Waterways and State Coastal Conservancy, *California Beach Restoration Study* 8-2 to 8-3 (Jan. 2002), *available at* http://www.dbw.ca.gov/Environmental/BeachReport.aspx; *also Changing California Coast*, *supra* n. 1, at 5 (explaining that along some stretches of hardened rock, annual erosion is negligible, while other stretches can experience as much as 10 feet per year).

time, the revetment[4] itself obstructs natural sediment transport from the bluffs to the beach. The net result is the elimination of sandy beaches in front of seawalls and the attendant loss of the significant recreational and ecological benefits which they provide to the public.

The California Coastal Commission ("Commission") is charged with protecting these public trust resources and uses for all Californians. The California Coastal Act, enacted by voter initiative in 1972 and codified by the Legislature in 1976, prioritizes the preservation of coastal resources and the protection of opportunities for public access and recreation along the coast. The state's common law public trust doctrine undergirds the Coastal Act, requiring the Commission to balance private project approvals against the potential loss of coastal public trust resources and uses. The California Constitution, as well, explicitly protects the public's right to access tidelands.

In the case now before the Court, the Commission accommodated Petitioner's private interests by approving the request to construct a seawall. But it also took seriously its duty

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[4] A revetment is a retaining structure of some kind intended to sustain an embankment. Seawalls are most commonly made of concrete or loose-piled rocks known as "riprap."

to protect public resources by imposing a 20-year reopener to determine the new structure's impact on the shoreline and neighboring properties. This permit condition is consistent with the Commission's ongoing legal obligation to protect public resources to the greatest extent feasible. A requirement to reevaluate the propriety of the seawall two decades from now, toward the end of its useful life, is particularly appropriate in light of scientific uncertainty over the future effects of accelerating sea-level rise along the Southern California coast and the Commission's inalienable fiduciary duty to protect the public trust tidelands from destruction.

ARGUMENT

I. California's Sandy Beaches Provide Enormous Ecological, Recreational, and Economic Value that Is Protected by State Law and Policy.

Sandy beaches of some kind exist along roughly 740 miles of California's coastline.[5] Beaches are critical to the ecological functioning of coastal systems, affording habitat for wildlife

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[5] Cheryl Hapke et. al, *National Assessment of Shoreline Change Part 3: Historical Shoreline Change and Associated Coastal Land Loss along Sandy Shorelines of the California Coast* (U.S. Geological Survey Open File Report 2006-1219) 67 (hereafter "*National Assessment Part 3*"), *available at* http://pubs.usgs.gov/of/2006/1219/

species, acting as storm buffers for adjacent inland ecosystems, and protecting the persistence of associated dunes and bluffs behind them.[6] In California, for example, beaches provide essential spawning habitat for grunion,[7] nesting habitat for such shorebirds as least terns and the endangered snowy plover, and haul-out sites for protected marine mammals.[8]

Equally important, California's beaches are a significant source of recreational and economic value. More than two-thirds of Californians visit the beach each year and the state's beaches receive twice as many visitors annually as do all National Parks combined.[9] California's wide, sandy beaches are used for volleyball, swimming, jogging, and surfing[10] and these recreational activities – like the beaches on which they occur –

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[6] Cal. Coastal Commission, *Draft Sea-Level Rise Policy Guidance* 61 (Oct. 14, 2013), *available at* http://documents.coastal.ca.gov/assets/slr/guidance/May2015_PublicReviewDraft.pdf.

[7] *Ibid.*

[8] *National Assessment Part 3*, *supra* n.4, at 24. Seals, sea lions, and other marine mammals periodically "haul out" – or leave the water to spend time on beaches and rocks – for healing, resting, mating, and pupping.

[9] *California Beach Restoration Study*, *supra* n.2, at 9-2.

[10] Kiki Patsch & Gary Griggs, *Littoral Cells, Sand Budgets, and Beaches: Understanding California's Shoreline* 23 (Oct. 2006) (hereafter "*Understanding California's Shoreline*"), *available at* http://www.dbw.ca.gov/csmw/PDF/LittoralDrift.pdf.

feature prominently in California's tourism materials.[11] Beach tourism is "a key driver of America's economy and support[s] U.S. competitiveness in a world economy."[12] In California alone, market expenditures by beach-goers reach approximately $3 billion annually,[13] and California beaches "continue to produce non-market economic benefits that are likely to be significantly greater than $2 billion annually."[14] They also "generate over $15 billion annually in tax revenue."[15]

The stretch of beach in the vicinity of Petitioner's seawall is no exception. Over the last decade or so, annual visitation at Encinitas Beaches was somewhere 2.5 and 3 million people. For

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[11] E.g., California Travel & Tourism Commission, *California dream big,* http://www.visitcalifornia.com/; Tripadvisor San Diego California, http://www.tripadvisor.com/Tourism-g60750-San_Diego_California-Vacations.html.

[12] James R. Houston, *The Economic Value of Beaches—A 2008 Update*, 76 Shore & Beach 25 (Summer 2008), *available at* http://www.wcu.edu/WebFiles/PDFs/Economic_Value_of_Beaches_2008.pdf.

[13] Linwood Pendleton & Judith Kildow, *The Non-Market Value of Beach Recreation in California*, 74 Shore & Beach 34 (Spring 2006), *available at* http://www.valueofwaves.org/uploads/1/1/4/2/11420190/pendleton_and_kildow_2006.pdf.

[14] *Id.*at 36.

[15] *California Beach Restoration Study*, *supra* n.2, at xv, 3-9, 3-10. A large percentage of this tax revenue goes to the federal government, but billions of dollars are still generated for the state.

instance, lifeguards estimated Encinitas beach attendance at 3,440,422 people in 2010 and 2,748,951 people in 2013.[16] In connection with a proposed beach replenish project, the U.S. Army Corps monetized the recreational value of Encinitas' beaches at roughly $6.3 million per year in 2010 and between approximately $7 and 7.5 million per year in 2015.[17]

Loss of beach width can significantly impact these uses and values. A 2002 survey of impacts on use associated with beach changes, including erosion, concluded that "at already narrow beaches like Carlsbad, many people responded that further erosion would deter them from visiting, even if the density of the

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[16] United States Lifeguarding Association Statistics, *available at* http://arc.usla.org/Statistics/public.asp (search "Encinitas, City of, California" in agency field).

[17] *See* U.S. Army Corps of Engineers, *Final Encinitas-Solana Beach Coastal Storm Damage Reduction Project Integrated Feasibility Study & Environmental Impact Statement/ Environmental Impact Report* 13-14 (April 2015) (showing "Segment 1" for the beaches between Daphne Street to the north and approximately K Street to the south as "Encinitas") and Appendix. E at E-53 (showing estimated recreation value for "Segment 1" as approximately $6.3 million in 2010 and between roughly $7 and $7.5 million for base year 2015), *available at* http://www.spl.usace.army.mil/Missions/CivilWorks/ProjectsStudies/SolanaEncinitasShorelineStudy.aspx

crowds was maintained."[18] The study estimated a statewide beach attendance decline of nearly 50 million visitors over the following ten years if beaches are narrowed.[19]

Not surprisingly, state law robustly protects public access to and use of California beaches, and the ecological services that beaches provide. The state owns all coastal land below the ordinary high tide mark[20] and holds these tidelands in trust for use by the public.[21] As sovereign trustee for the people of California, the state has continuing supervisory control over the tidelands and a corollary affirmative fiduciary duty "to protect the people's common heritage [in tidelands and other navigable waters], surrendering that right of protection only in rare cases

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[18] *California Beach Restoration Study*, *supra* n.2, at 3-18, 3-19; *see also* Linwood Pendleton, et al., *Size Matters: The Economic Value of Beach Erosion and Nourishment in Southern California*, 30 Contemporary Economic Policy 223 (2012), *available at* http://onlinelibrary.wiley.com/doi/10.1111/j.1465-7287.2011.00257.x/epdf or https://www.deepdyve.com/lp/wiley/size-matters-the-economic-value-of-beach-erosion-and-nourishment-in-eKZf4UMxMl.

[19] *California Beach Restoration Study*, *supra* n.2, at 3-20.

[20] Cal. Civ. Code § 670.

[21] *People v. California Fish Co.* (1913) 166 Cal. 576; *City of Berkeley v. Superior Court* (1980) 26 Cal.3d 515, 521.

when the abandonment of that right is consistent with the purposes of the trust."[22]

Traditionally, the public trust doctrine protected navigation, commerce, and fisheries, including "the right to fish, hunt, bathe, swim, to use for boating and general recreation purposes the navigable waters of the state, and to use the bottom of the navigable waters for anchoring, standing, or other purposes."[23] More recently, California courts have expended public trust protections to protect ecological and recreational values.[24] In particular, "[t]here is a growing public recognition that one of the most important public uses of the tidelands – a use encompassed within the tidelands trust – is the preservation of those lands in their natural state, so that they may serve as ecological units for scientific study, as open space, and as environments which provide food and habitat for birds and marine life, and which favorably affect the scenery and climate of the area."[25]

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[22] *National Audubon Soc'y v. Superior Court* (1983) 33 Cal.3d 419, 440.

[23] *Marks v. Whitney* (1971) 6 Cal.3d 251, 259.

[24] *National Audubon Soc'y*, *supra*, 33 Cal. 3d at 434-35.

[25] *Marks v. Whitney*, *supra*, 6 Cal. 3d at 259-60.

In response to early abuses in the disposition of San Francisco Bay tidelands, California amended its constitution in 1879 to protect public access to these lands.[26] That constitutional amendment provides:

> No individual, partnership, or corporation, claiming or possessing the frontage or tidal lands of a harbor, bay, inlet, estuary, or other navigable water in this State, shall be permitted to exclude the right of way to such water whenever it is required for any public purpose, nor to destroy or obstruct the free navigation of such water; and the Legislature shall enact such laws as will give the most liberal construction to this provision, so that access to the navigable waters of this State shall be always attainable for the people thereof."[27]

Thus, "public access rights [to navigable water and tidelands] are a matter of constitutional protection," subject to legislative implementation.[28]

For coastal tidelands, the California Legislature has implemented this constitutional protection primarily through the Coastal Act.[29] One of the Legislature's core goals in enacting the

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[26] *Carstens v. Cal. Coastal Comm'n* (1986) 182 Cal. App. 3d 277, 288.

[27] Cal. Const., art. X, sec. 4.

[28] *Sumner Hill Homeowners' Assn., Inc. v. Rio Mesa Holdings, LLC* (2012) 205 Cal. App. 4th 999, 1024.

[29] The Government Code implements similarly robust public access protections for access to inland waters. See *Kern River*

statute was to "[m]aximize public access to and along the coast and maximize public recreational opportunities in the coastal zone consistent with sound resources conservation principles and constitutionally protected rights of private property owners."[30] To further this goal, the Coastal Act contains an entire article on "Public Access" and another on "Recreation."[31] With respect to public access, for example, the statute directs: "In carrying out the requirement of Section 4 of Article X of the California Constitution maximum access, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse."[32] And for publicly-owned beaches above the mean high tide mark, "[d]evelopment shall not interfere with the public's right of access

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Pub. Access Com. v. City of Bakersfield (1985) 170 Cal. App. 3d 1205, 1215 (discussing Cal. Gov. Code § 66478.1 et seq.).

[30] Cal. Pub. Res. Code § 30001.5(c). Another central goal of the statute is "to protect the ecological balance of the coastal zone and prevent its deterioration and destruction." *Id.* § 30001.

[31] Cal. Pub. Res. Code §§ 30210-14 (Article 2) and §§ 30220-24 (Article 3).

[32] Cal. Pub. Res. Code § 30210.

to the sea . . . including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation."[33]

II. Coastal Beaches and Bluffs Are Part of a Dynamic Natural Cycle that Can Be Dramatically Altered by Seawalls.

Although a quintessential feature of the California landscape, sandy beaches are not static. They ebb and flow with the tides and seasons, forming a dynamic system. The lifeblood of a healthy, functioning beach ecosystem is a continuous supply of sand.[34] Sediment weathered from upland rocks and carried to the coast in rivers and streams accounts for much of the sand found on California beaches,[35] while eroding sea cliffs directly above the beach contribute most of the remaining sediment.[36] Wave action and currents push these sand deposits down the coast and gradually distribute them along the shoreline.[37] As a

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[33] Cal. Pub. Res. Code § 30211.

[34] *Changing California Coast*, *supra* n.1, at 480.

[35] *California Beach Restoration Study*, *supra* n.2, at 2-2; *Changing California Coast*, *supra* n.1, at 46.

[36] *California Beach Restoration Study*, *supra* n.2, at 2-2.

[37] *Changing California Coast*, *supra* n.1, at 49.

result, beaches become wider in the summer months after winter rains have swelled rivers and delivered sand to the coastal zone.[38]

Beach sand does not stay put, however. Water and wind continuously reshape beach structure. Wave energy pounding the shoreline during storm events is the greatest source of seasonal changes to sand levels, but tides and sea-level also play a role by enhancing the effect of wind and waves.[39] During the winter storm months, waves generally move sediment seaward, narrowing the beach.[40] Through these cycles, beaches erode seasonally and then are replenished again when sand returns the following summer.[41]

While California's sandy beaches perennially expand, contract, and expand again by this combination of weather and tides, the coastal bluffs and dunes behind them are gradually but inexorably retreating landward. Like sandpaper, waves erode coastal bluffs through the day-to-day and year-to-year motion of

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[38] *Changing California Coast*, *supra* n.1, at 48-49.

[39] *Id.* at 479.

[40] *California Beach Restoration Study*, *supra* n.2, at 2-2 to 2-3.

[41] *Changing California Coast*, *supra* n.1, at 76.

sand and water against the cliff face.[42] Generally, winter storms lead to the greatest cliff erosion as a result of stronger waves, higher tides, and lack of protective beach during those months. While the average erosion rate is one foot or more per year, the process is often episodic and irregular, with the greatest rates of coastal erosion occurring in spurts, such as during El Niño periods when tides are high and storms are frequent.[43] Estimates in the scientific literature vary on how much of the California coast is naturally eroding, in part because the empirical work is difficult and has not been completed everywhere, but one of the leading experts in the field has explained that "[i]t is evident that the cliffs and bluffs are undergoing active erosion along virtually the entire coast of California."[44] There is, however, an important distinction between irreversible, unidirectional coastal cliff erosion and the

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[42] *Changing California Coast*, *supra* n.1, at 77; see also Cheryl J. Hapke and David Reid, *National Assessment of Shoreline Change, Part 4: Historical Coastal Cliff Retreat along the California Coast* (U.S. Geological Survey Open File Report 2007-1133) 1 (hereafter "*National Assessment Part 4*"), *available at* http://pubs.usgs.gov/of/2007/1133/of2007-1133.pdf.

[43] *California Beach Restoration Study*, *supra* n.2, at 8-3.

[44] *Changing California Coast*, *supra* n.1, at 87.

seasonal, recoverable erosion of the beaches.[45] Even as the coastline retreats landward, its beaches will survive so long as the supply of sand to the shore is maintained.[46]

Coastal armoring to protect manmade structures on naturally receding beaches, dunes, or bluffs can dramatically alter this dynamic system.[47] Seawalls and other revetments essentially fix the back edge of a beach segment, preventing the bluff erosion and shoreline migration that would otherwise occur.[48] Interference with these natural processes has several compounding impacts. Armoring structures interrupt sediment transport from bluff to beach – sometimes called "impoundment

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[45] *California Beach Restoration Study*, *supra* n.2, at 8-3.

[46] *Ibid.*

[47] For a general cataloguing of coastal armoring impacts, *see* Todd T. Cardiff, *Conflict in the California Coastal Act*, 38 Cal. Western L. Rev. 255 (2001); Molly Loughney Melius & Margaret R. Caldwell, *2015 California Coastal Armoring Report: Managing Coastal Armoring and Climate Change Adaptation in the 21st Century* (June 2015), *at available* https://www.law.stanford.edu/sites/default/files/publication/943163/doc/slspublic/CalCoastArmor%20FULL%20REPORT%206.17.15.pdf

[48] *Id.* at 8; Gary Griggs, *California's Retreating Coastline: Where Do We Go From Here?*, Proc. Am. Meteorological Soc. Ann. Meeting (San Diego) 83,241, 83,246 (2005), *available at* https://ams.confex.com/ams/pdfpapers/83241.pdf.

loss" – thereby diminishing sand supply and replenishment.[49] At the same time, the armored bluffs and the beach below cannot migrate landward as they otherwise would on a naturally eroding coast. As adjacent unarmored stretches of the beach continue to naturally recede, the beach in front of the seawall is narrowed over time. This phenomenon, known as "passive erosion," is considered by experts to be "perhaps the most significant and the most misunderstood impact of coastal armoring."[50] Active scour in front or at the edges of the seawall, as the waves pound the

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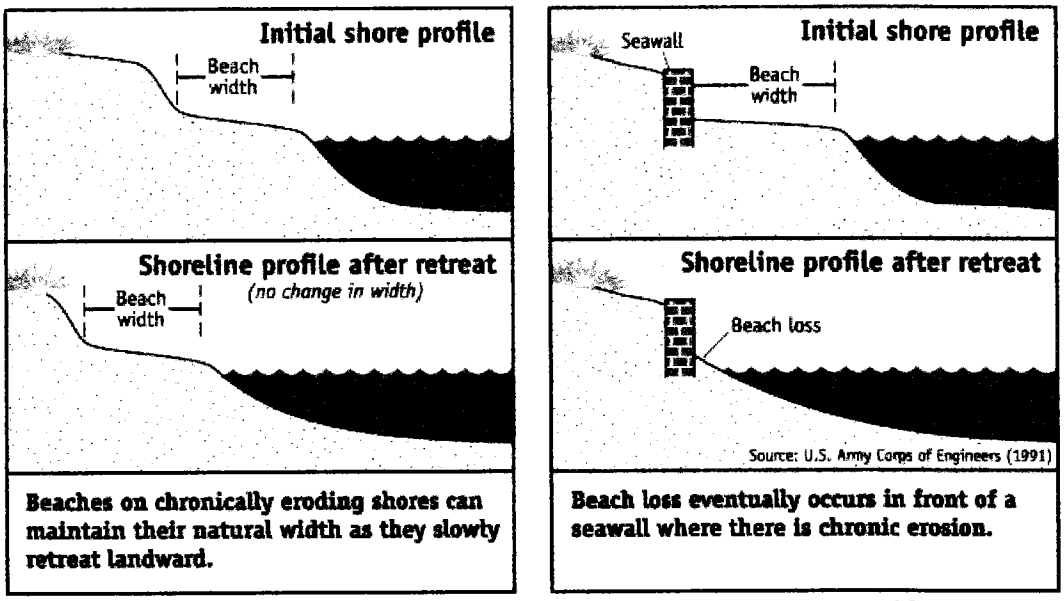
[49] Gary Griggs, *The Effects of Armoring Shorelines—The California Experience*, in Puget Sound Shorelines and the Impacts of Armoring—Proceedings of a State of the Science Workshop, 81 (Shipman, et al. eds., 2010), *available at* http://pubs.usgs.gov/sir/2010/5254/pdf/sir20105254_chap8.pdf. Loss of source sand as a result of upland dams and other human activities is already a significant problem on the California coast. See Michael Slagel & Gary Griggs, *Cumulative Loss of Sand to the California Coast by Dam Impoundment* (2006), *available at* http://www.dbw.ca.gov/csmw/PDF/Slagel&Griggs_CA_Dams_Manuscript.pdf. For example, in both the Santa Barbara and Oceanside beach regions (littoral cells), total sand supply has been reduced by 40 and 26 percent, respectively, due to river damming and coastal armoring structures. *California Beach Restoration Study*, *supra* n.2, at 8-45. Impoundment losses caused by seawalls only further aggravate this already-considerable problem.

[50] Rebecca Stamski, *The Impacts of Coastal Protection Structures in California's Monterey Bay National Marine Sanctuary* 9 (U.S. Dep't of Commerce, Feb. 2006), *available at* http://sanctuaries.noaa.gov/special/con_coast/stamski.pdf.

revetment, can exacerbate this passive loss of sandy beach habitat. The long-term effect of passive erosion is illustrated by a simple U.S. Army Corps of Engineers cross-sectional graphic showing a naturally eroding beach over time as compared to an armored beach on the same naturally eroding coast:

Shoreline Hardening and Beach Loss



http://nsgl.gso.uri.edu/hawau/hawaug98001.pdf

Passive erosion associated with coastal armoring threatens public access to, and recreational use of, sandy beaches by radically altering the coastal profile. As adjacent landforms on a naturally eroding coast (cliffs, beaches, etc.) continue to recede landward, the armored portion of the shoreline becomes an artificial headland or peninsula, even while the sandy beach in

front of it narrows or disappears.[51] This "peninsula effect" can make the beach in front of a revetment entirely impassible during high water periods. By decreasing sandy beach habitat, seawalls also limit a beach's recreational carrying capacity, thereby reducing beach attendance and local expenditures from beachgoers.[52]

The resultant beach loss from seawalls likewise reduces or eliminates habitat for shorebirds and coastal plants and animals in the intertidal zone (between the low tide and high tide lines) and supratidal zone (beach immediately above the high tide line).[53] Shrinking beaches provide less area for nesting, breeding,

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[51] *Id.* at 53.

[52] See generally Linwood Pendleton, et al., *Estimating the Potential Economic Impacts of Climate Change on Southern California Beaches*, Climate Change 109, 227-98 (2011), *available at* http://link.springer.com/article/10.1007/s10584-011-0309-0, for a discussion of beach attendance impacts from reduced beach size. Beach use studies likely underestimate welfare value because they do not measure the more inchoate loss of "existence value," the value that people who never go to a beach may be willing to pay to preserve it, and the beach's "option value," the value of preserving the beach in order to provide the opportunity to enjoy it in the future. E.g., Najern Raheem, et al., *The Economic Value of Coastal Ecosystems in California*, http://www.opc.ca.gov/webmaster/ftp/project_pages/Fund_Studie/NCEAS_NonMkt_Value_Report.pdf

[53] Jenifer E. Dugan et al., *Ecological Effects of Coastal Armoring on Sandy Beaches*, 29 Marine Ecology 160 (2008), *available at*

and feeding for shorebirds. A 2008 study of the ecological effects of hard structures on sandy beaches in south Santa Barbara County indicated that armored beaches had significantly fewer and smaller intertidal invertebrates, three times fewer shorebirds, more than four times fewer gulls, and more than seven times fewer numbers of other birds species compared to unarmored beaches.[54] Many endemic and endangered species depend on the full spectrum of coastal environments to survive. The Coastal Commission's draft guidance on sea-level rise explains, for example, that "grunion need a sandy beach environment in order to survive, the California clapper rail is dependent on marshes and wetlands, and the black abalone requires rocky intertidal habitat."[55] The erosion of these habitat components, especially in a regime of accelerating sea-level rise, poses a significant long-term threat to intact beach ecosystems

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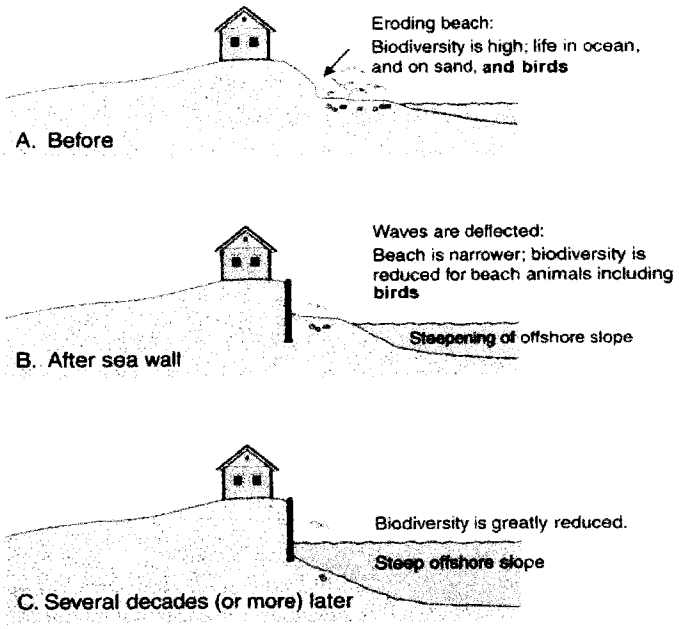
http://onlinelibrary.wiley.com/doi/10.1111/j.1439-0485.2008.00231.x/epdf.

[54] Jenifer E. Dugan and David M. Hubbard, *Ecological Effects of Coastal Armoring: A Summary of Recent Results for Exposed Sandy Beach in Southern California*, in Puget Sound Shorelines and the Impacts of Armoring—Proceedings of a State of the Science Workshop, May 2009 (U.S. Geological Survey Scientific Investigations Report 2010-5254) 187-194, *available at* http://pubs.usgs.gov/sir/2010/5254/pdf/sir20105254_chap19.pdf.

[55] *Draft Sea-Level Rise Policy Guidance*, *supra* n.6, at 61.

and sustainable biodiversity,[56] as depicted below:



Source: Pilkey, O.H. and Dixon, K. L. 1996
(modified) *The Corps and the Shore*. Island Press, Washington, D.C.

These impacts are not hypothetical, but are already occurring along vulnerable segments of the California coast. Today, armoring structures occupy at least 10 percent of the state's shoreline and cover more than 33 percent of the coast in Ventura, Los Angeles, Orange, and San Diego Counties.[57] The photos below dramatically illustrate passive erosion and the

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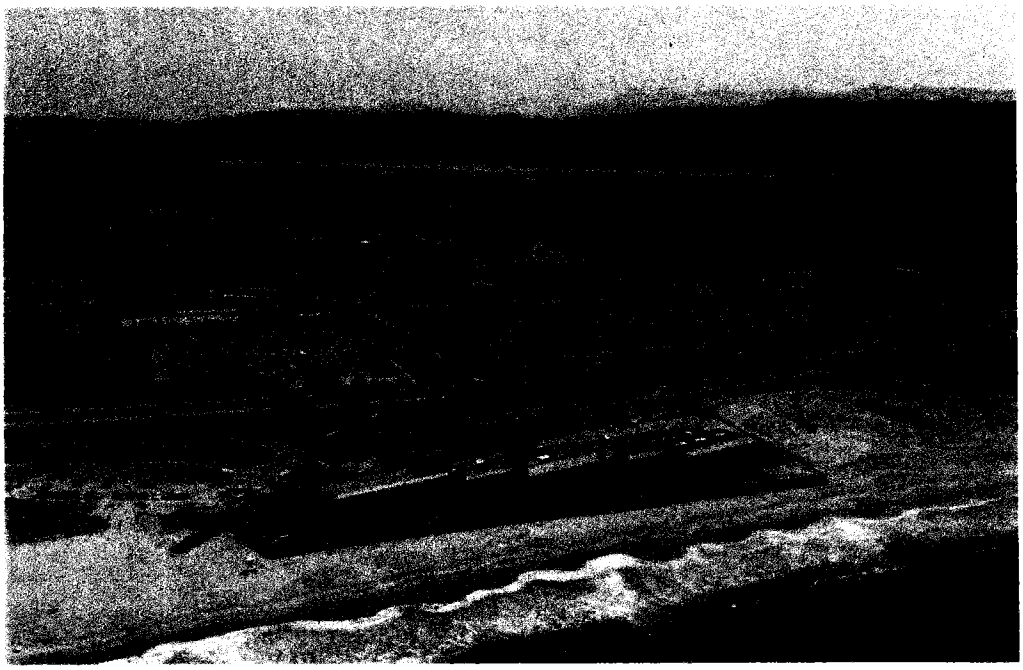
[56] *Id.*; Kota Funayama et al., *Effects of Sea Level Rise on Northern Elephant Seal Breeding Habitat at Point Reyes Peninsula, California*, Aquatic Conser: Marine and Freshwater Ecosystems (2012), *available at* http://geog.sfsu.edu/sites/sites7.sfsu.edu.geog/files/thesis/Funayama_aqc2318.pdf

[57] *The Effects of Armoring Shorelines—The California Experience*, *supra* n.49, at 77.

peninsula effect. The first two show summer and winter profiles, respectively, of the sandy beach in front of the Monterey Beach Hotel, which was constructed on an eroding shoreline and then heavily armored to protect it from wave damage. During high water, the public cannot access or safely traverse the beach. The third graphic depicts elevational modeling of the same structure based on remote sensing laser data; it highlights the dramatic effect that coastal armoring can have on beach profile and public access opportunities along a naturally eroding shoreline.



Aerial photograph of the Monterey Beach Hotel (Seaside, CA) in summer, showing wide beach, low back-beach area, and migrating dune. Rebecca Stamski, *Coastal Erosion and Armoring in Southern Monterey Bay*, ver. 1.1 (June 2005), http://montereybay.noaa.gov/resourcepro/resmanissues/pdf/061305 erosion.pdf

Down shore photograph of Monterey Beach Hotel in winter, showing loss of beach and public access during January 5, 2005 high tide. Cal. State Univ. Monterey Bay, Watershed Geology Lab, Monterey Bay Seawalls website, http://hydro.csumb.edu/essp%20360/html/montereyseawalls.html

The "peninsula effect" is also apparent in this digital elevation model produced from 2003 NOAA LIDAR data. The rectangular outline of the Monterey Beach Hotel "footprint" juts into the beach and nearshore environment. CSUMB, Watershed Geology Lab, http://hydro.csumb.edu/essp%20360/html/montereyseawalls.html

The last two photographs, presented by the Coastal Commission to the California Senate Budget Committee in a discussion about coastal climate adaptation and "planned retreat," depict demolition and subsequent removal of Stilwell Hall at Fort Ord in Monterey County, ordered by the Commission. They illustrate the effect of revetments on the beach, as well as the dynamism and resilience of coastal processes once a revetment is removed. As the Commission explained in its briefing to the Legislature that accompanied its slideshow: "As seen in the top photo, the rocks effectively blocked lateral beach access due to encroachment and 'passive erosion' in front of the rocks. Notice that where the beach was able to retreat naturally on either side of the revetment, the beach was maintained. In the bottom photo, you can see that soon after the revetment was removed, the beach easily restored itself through the renewal of natural erosion dynamics. This beach and bluff top is now part of Fort Ord Dunes State Park."[58]

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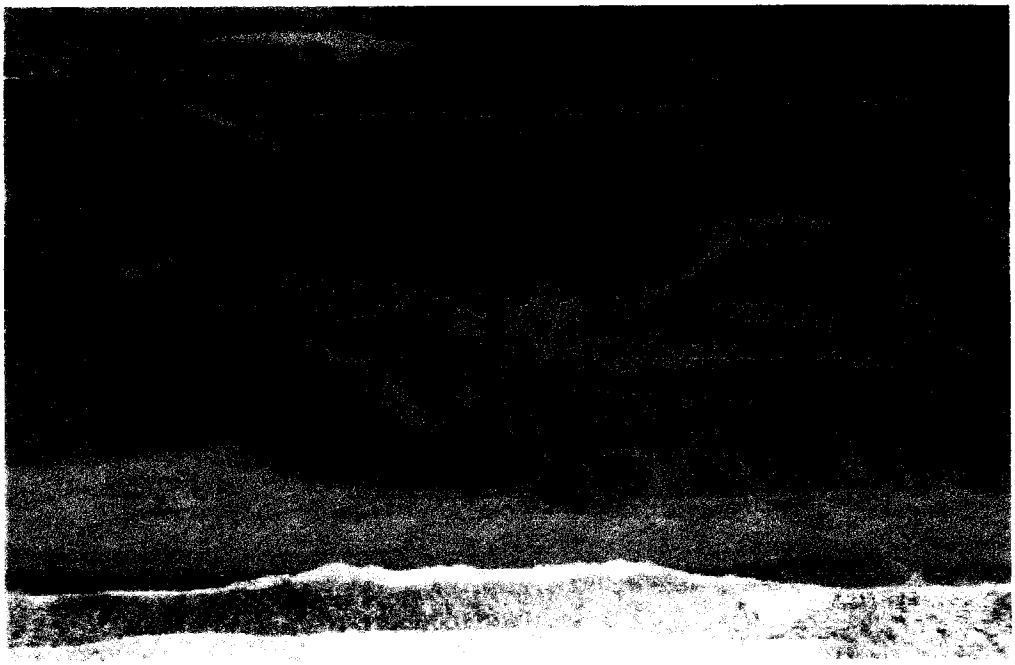
[58] For additional illustrative photos, graphics, and explanation, *see California Coastal Commission Handouts for Senate Budget Subcommittee 2, Coastal Climate Adaptation* (Mar. 20, 2014), *available at* http://www.coastal.ca.gov/climate/Handouts_Senate Subcommittee2_Mar20.2014.pdf



Finally, while temporarily protecting a waterfront property owner, a seawall can damage neighboring property values. Installation of a seawall exacerbates beach erosion on adjacent

waterfront properties, creating what are known as "edge effects" as the structure deflects wave action down-shore.[59] And at least one study has shown that while construction of a seawall increases the individual value for the waterfront property, it *decreases* the property value of adjacent, inland/non-waterfront properties to such an extent that there is a net property value loss for the community.[60] The same study found that if multiple seawalls are built in the community, waterfront property values declined to near where they started, even while the value of non-waterfront property continued to fall.[61] Thus, while coastal armoring may (temporarily) protect individual property owners, it does so at the expense of neighbors and to the detriment of the larger community.

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[59] J. Peter Byrne & Jessica Grannis, *Coastal Retreat Measures*, in The Law of Adaptation to Climate Change: U.S. and International Aspects, 267, 269 (Michael B. Gerrard & Katrina Fischer Kuh, eds., 2012), *available at* http://www.americanbar.org/content/dam/aba/events/real_property_trust_estate/symposia/2015/materials/rp_sea_level_rise_and_property_rights_coastal_retreat_measures.authcheckdam.pdf.

[60] Warren Kriesel and Robert Friedman, *Coping with Coastal Erosion: Evidence for Community-Wide Impacts*, 71 SHORE & BEACH 19 (2003), *available at* http://coastalchange.ucsd.edu/pdfs/KrieselFriedman.pdf

[61] *Id.* at 19-21.

III. The Impacts of Seawalls on Beach Ecosystems, Recreational Users, and Neighboring Property Owners Are Likely to Worsen with Accelerating Sea-Level Rise.

Accelerating sea level rise in the wake of rapid climate change will only worsen the negative externalities of coastal armoring. Because no one can yet accurately predict how sea level rise will progress over the next two decades, state agencies responsible for protecting coastal resources and public access, particularly the Coastal Commission, have a legal obligation to use their regulatory tools as best they can to address and accommodate this uncertainty. A permit condition for a new seawall which provides for revisiting the structure's status in 20 years – well into the life of the wall – reasonably responds to this significant uncertainty.

The climate system is unequivocally warming.[62] Over the past century, average global temperature has increased by about 1.4°F.[63] Since the 1950's, the effects of climate warming (including atmospheric temperature rise, snow and ice melt, and

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[62] Intergovernmental Panel on Climate Change, *Climate Change 2013: The Physical Science Basis*, Summary for Policymakers 4 ("*IPCC 2013*"), *available at* http://www.ipcc.ch/report/ar5/wg1/.

[63] *Draft Sea-Level Rise Policy Guidance*, *supra* n.6 at 12.

sea level rise) have been unprecedented.[64] In the Northern Hemisphere, the period between 1983 and 2012 was likely the warmest 30-year period of the last 1400 years,[65] and globally 2014 was the warmest year on modern record.[66] Extreme heat waves, droughts, fires, floods, and rapidly melting ice caps are a few of the secondary effects of this change.[67] Along the coasts, sea level rise is the "most obvious manifestation" of the warming trend.[68]

Two phenomena explain global sea level rise. First, warm water is less dense and takes up slightly more volume than cold

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[64] *IPCC 2013*, *supra* n.62, at 4 (see also graphs from report on temperature anomalies).

[65] *Id.* at 5.

[66] Brian Kahn, *2014 Officially the Hottest Year on Record*, Scientific American (Jan. 5, 2015), *available at* http://www.scientificamerican.com/article/2014-officially-hottest-year-on-record/; https://www.nasa.gov/press/2015/january/nasa-determines-2014-warmest-year-in-modern-record.

[67] *Draft Sea-Level Rise Policy Guidance*, *supra* n.6, at 24.

[68] Nicole Russell & Gary Griggs, *Adapting to Sea Level Rise: A Guide for California's Coastal Communities* 4 (Jan. 2012), *available at* http://seymourcenter.ucsc.edu/OOB/Adapting%20to%20Sea%20Level%20Rise.pdf; National Research Council, *Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future* 15 (2012) ("*NRC 2012*"), *available at* http://ssi.ucsd.edu/scc/images/NRC%20SL%20rise%20W%20coast%20USA%2012.pdf.

water.[69] As ocean water warms, it raises sea level. Second, rising global temperatures cause glaciers and ice sheets to melt, adding freshwater to the oceans.[70] At the end of the last ice age when the Earth was considerably cooler than today, 11 million cubic miles of water were locked on land as ice caps and glaciers, and California's coastline was many miles west of its current location.[71]

Future predictions about sea level are neither "constant nor uniform," but there is evidence that sea level rise will accelerate.[72] Sea level rose an average of 1.7 ± 0.5 mm per year over the twentieth century, and increased to 3.1 ± 0.7 mm per year between 1993-2003.[73] The last observed sea-level rise periods also exceeded projections by roughly 50 percent.[74] It is likely that this trend will continue given current reports of greenhouse gas emissions, ocean water temperatures, and more

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[69] *Changing California Coast*, *supra* n.1, at 75.

[70] *Draft Sea-Level Rise Policy Guidance*, *supra* n.6, at 46, Table 3.

[71] *California Beach Restoration Study*, *supra* n.2, at 8-2.

[72] *NRC 2012*, *supra* n.68, at 14.

[73] *Id.* at 2.

[74] Martin Vermeer & Stefan Rahmstorf, *Global Sea Level Linked to Global Temperature*, 106 Proceedings of the Nation Academy of Science 21527-32 (Dec. 22, 2009), *available at* http://www.pnas.org/content/106/51/21527.full.pdf.

rapidly breaking ice sheets and glaciers in Greenland and West Antarctica.[75] There is also some reason to believe that Pacific storms along the California will increase in magnitude and frequency, a potentially critical factor in future planning because the most damaging erosion occurs during storm events.[76]

The science behind sea level rise, however, is still evolving; many physical processes (such as the dynamics of ice-sheets, glaciers, and oceanic heat uptake) are not fully understood.[77] Moreover, there are no universally agreed-upon models or approaches for projecting sea-level rise.[78] Sea-level models may include extrapolations of historic trends, estimations from physical models, or a combination of observations and modeling known as semi-empirical models.[79] As the National Research Council explained in its analysis of future sea level rise along the California coast:

> The projections of future sea-level rise have large uncertainties resulting from an incomplete understanding

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[75] *NRC 2012, supra* n.68, at 7.

[76] *Ibid.*

[77] *Global Sea Level Linked to Global Temperature, supra* n.74,at 21527.

[78] *NRC 2012, supra* n.68, at ix.

[79] *Draft Sea-Level Rise Policy Guidance, supra* n.6, at 42.

> of the global climate system, the inability of global climate models to accurately represent all important components of the climate system at global or regional scales, a shortage of data at the temporal and spatial scales necessary to constrain the models, and the need to make assumptions about future conditions (e.g., greenhouse gas emissions, large volcanic eruptions) that drive the climate system.[80]

Thus, it may be years before there is any established certainty for future projections.

Adding to this uncertainty, sea levels and sea level rise are not constant from place to place. Sea level in the western Pacific, for example, has risen three times faster than the global average since 1993.[81] The National Research Council's future sea-level predictions for California are slightly higher than global estimates because most of the state's coastline is subsiding.[82] Additionally, actual sea-level rise at any localized area along the coast will vary due to vertical land motion and ocean circulation.[83]

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[80] *NRC 2012, supra* n.63, at7.

[81] Robert J. Nicholls & Anny Cazenave, *Sea-Level Rise and Its Impact on Coastal Zones*, 328 Science1517, 1518 (June 18, 2010), *available at* http://www.sciencemag.org/content/328/5985/1517.full.

[82] *NRC 2012, supra* n.68, at 4.

[83] *Draft Sea-Level Rise Policy Guidance, supra* n.6, at 42.

Government decisionmakers, in short, must rely on uncertain global projections while also trying to account for local conditions and specific time periods. Permit conditions that provide the state with sufficient flexibility to adapt to an uncertain future along the California coast are thus essential to the protection of public beaches and tidelands.

IV. Coastal Permit Flexibility Is Critical to the Commission's Ability to Protect Public Tidelands and Beaches and the Public's Inalienable Access to Them.

The coastal development permit at issue here must be evaluated in the context of ongoing natural coastal processes and the impact of private seawalls on public beach resources and access. As noted, California owns the coastal tidelands and, in many places, the adjacent dry sand beach. Unlike other state property, California holds these public tidelands in trust for the people, and its supervisory power includes "everything necessary to the proper administration of the trust."[84] State power to control, regulate and utilize the public tidelands "is absolute, except as limited by the paramount supervisory power of the

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[84] *City of Long Beach v. Mansell* (1970) 3 Cal.3d 262, 282.

federal government over navigable waters."[85] Put differently, "the core of the public trust doctrine is the state's authority as sovereign to exercise a continuous supervision and control over" tidelands and submerged lands and to prevent any party from harming or acquiring a vested right to the resources and interests protected by the public trust.[86]

As is true for any fiduciary, the government "does not have the power to abdicate its role as trustee in favor of private parties."[87] No party, therefore, can extinguish the public trust, and the actions of public agencies under other laws are subject to the continuing duties imposed by the trust.[88] As a leading academic scholar on the topic has explained: "The trustee has a

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[85] *Marks v. Whitney*, 6 Cal. 3d at 259.

[86] *National Audubon*, 33 Cal. 3d at 425, 445.

[87] *City of Berkeley*, 26 Cal.3d at 521; *see also Illinois Central Railroad Company v. Illinois*, 146 U.S. 387, 453-54 (1892) (holding that state "can no more abdicate its trust over property in which the whole people are interested, like navigable waters and soils under them . . . than it can abdicate its police powers in the administration of government and the preservation of the peace").

[88] *See, e.g., National Audubon*, 33 Cal. 3d at 437-40 (discussing the inalienability of the public trust and the state's continuing obligations thereunder); *State of California ex rel. State Lands Commission v. Superior Court of Sacramento County* (1995) 11 Cal.4th 50, 63-64 (1995); *City of Berkeley, supra*, 26 Cal.3d at 521; *People v. California Fish Co., supra*, 166 Cal. at 591.

duty to protect the trust property against damage or destruction. . . . Under well-established principles of private trust law, trustees may not sit idle and allow damage to occur to the trust. . . . The duty to protect trust assets is also a duty to prevent waste to those assets."[89] In the public trust context, "[t]he basic fiduciary duty is to maintain the asset's ability to provide a steady abundance of environmental services for future generations."[90]

The state's issuance of a coastal development permit is subject to this fiduciary duty. As sea level rises, so too does the level of mean high tide and with it, the public's trust rights in the shore. A seawall that fixes the back of the beach threatens the slow but inevitable retreat of California's public tidelands landward. In effect, "[s]eawalls violate the public trust in a time of rising seas" because they artificially prevent the movement of the mean high tide line, thereby denying "the public its reversionary trust interest" and destroying "the public's trust

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[89] Mary Christina Wood, *Advancing the Sovereign Trust of Government to Safeguard the Environment for Present and Future Generations (Part II): Instilling a Fiduciary Obligation in Governance*, 38 Envtl. L. 91, 94-95 (2009).

[90] *Id.* at 95; *see also National Audubon*, 33 Cal. 3d at 440.

interests in the beach itself: with the beach damaged or entirely absent, the trust interests in access, navigation, fisheries, and ecosystem functions, among others, have been entirely lost."[91] As the Ninth Circuit recently noted in a dispute involving shoreline armoring by waterfront homeowners and ambulatory tidelands held in trust by the federal government for the Lummi Indian Nation, "[w]hile the Homeowners cannot be faulted for wanting to prevent their land from eroding away . . . the Homeowners cannot permanently fix the property boundary, thereby depriving the Lummi of tidelands that they would otherwise gain."[92]

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[91] Meg Caldwell & Craig Holt Segall, *No Day at the Beach: Sea Level Rise, Ecosystem Loss, and Public Access Along the California Coast,* 34 Ecology L.Q. 533, 554 (2007) ("In the absence of a seawall, the trust is preserved. Title would transfer under common law if erosion were allowed to occur; the rolling easement ensures that the shore will be able to move freely and that title to the migrating marsh or wet sand beach will ultimately shift to the public."); *see also* Niki L. Pace, *Wetlands or Seawalls? Adapting Shoreline Regulation to Address Sea Level Rise and Wetland Preservation in the Gulf of Mexico,* 26 J. Land Use 327, 350 (2011) ("[B]y allowing shoreline armoring, states are both failing to protect public trust land and aiding in its destruction."); Madeline Reed, Comment, *Seawalls and the Public Trust: Navigating the Tension Between Private Property and Public Beach Use in the Face of Shoreline Erosion,* 20 Fordham Envtl. L. Rev. 305, 307-22 (2009).

[92] *United States v. Milner* (9th Cir. 2009) 583 F.3d 1174, 1187.

When exercising its discretionary permitting authority under the Coastal Act, the Coastal Commission is duty-bound by its public trust obligations to guard against such a loss of public trust assets. Moreover, section 30210 of the Coastal Act, implementing Article X, section 4 of California Constitution, requires that the Commission protect maximum beach access and recreational opportunities for all people. As explained above, coastal armoring threatens to do just the opposite – to diminish public beaches and destroy public access to the tidelands.

In this case, the Commission satisfied its legal duties not by prohibiting the construction of Petitioner's seawall altogether, but merely by requiring that the matter be revisited in 20 years. That permit condition is reasonable, especially in the face of substantial uncertainty around the future rate of sea level rise and local coastal erosion. It allows the state time to determine whether Petitioner's seawall is harming or impeding the public tidelands, consistent with the 18.6-year lunar cycle by which we establish mean high tide levels.[93] In the event that the

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[93] E.g., Fedor Baart, et al., *The Effect of the 18.6-Year Lunar Nodal Cycle on Regional Sea Level Rise Estimates*, 28 J. of Coastal Research 511-16 (2012) (noting that 18.6-year lunar cycle influences tidal amplitude and regional mean sea levels and

Commission subsequently determines, 20 years from now, that public tidelands are at risk of being lost and that a seawall is therefore no longer compatible with the state's fiduciary obligations, the 20-year period is sufficiently long to amortize the cost of the structure.[94]

Nothing in the Coastal Act prohibits the Commission from attaching a condition that limits the duration of a coastal development permit. The Commission has broad discretion to ensure that the permits it approves are "in conformity" with the Coastal Act and the certified "local coastal program" in areas that

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explaining its importance in estimating regional sea level), available at http://www.bioone.org/doi/pdf/10.2112/JCOASTRES-D-11-00169.1; *Borax Consol. v. City of Los Angeles* (1935) 296 U.S. 10, 27 (noting that "there is 'a periodic variation in the rise of water above sea level having a period of 18.6 years,'" and finding no error where "the Court of Appeals directed that in order to ascertain the mean high-tide line with requisite certainty in fixing the boundary of valuable tidelands, such as those here in question appear to be, 'an average of 18.6 years should be determined as near as possible.'"); *Lechuza Villas W. v. California Coastal Comm'n* (1998) 60 Cal. App. 4th 218, 237 (recognizing that mean high tide mark is ambulatory and "is determined by averaging high tides over a period of 18.6 years").

[94] *See* Sorell E. Negro, *Built Seawalls: A Protected Investment or Subordinate to the Public Trust?*, 18 Ocean & Coastal L.J. 89, 117 (2012) (explaining why amortization period for a seawall is likely only a few years).

have one.[95] The courts have recognized that, in exercising this discretion, the Commission may impose reasonable permit conditions in the face of scientific uncertainty concerning impacts; such permit conditions do not unduly burden or trample the rights of property owners whose revetments threaten public beaches and public access the tidelands.[96] In fact, if natural erosion and sea level rise cause the public tidelands to move landward to the point where Petitioner's seawall impedes the public right to those lands, California could seek to remove the wall as a public nuisance or trespass on public trust lands.[97]

Moreover, the 20-year reopener allows the state to determine whether Petitioner's seawall is undermining government efforts, in the face of sea level rise, to maintain

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[95] Cal. Pub. Res. Code § 30604(a)-(c).

[96] *Ocean Harbor House Homeowner's Association v. California Coastal Comm.* (2008) 163 Cal. App. 4th 215, 242 ("the Commission has broad discretion to adopt measures designed to mitigate all significant impacts that the construction of a seawall may have"); *Whaler's Village Club v. California Coastal Comm.* (1985) 173 Cal. App. 3d 240, 261 ("the erosive nature of the beaches in Ventura County coupled with the tendency of seawalls and revetments to increase the sand loss on beaches with a tendency to recede constitutes a cumulative adverse impact and places a burden on public access to and along state tide and submerged lands for which corresponding compensation by means of public access is reasonable").

[97] *Scott v. City of Del Mar* (1997) 58 Cal. App. 4th 1296, 1305-06.

beaches through artificial sand replenishment programs on this stretch of the coast. Concerned about the loss and preservation of public beaches, the California Legislative enacted the Public Beach Restoration Act in 2000, committing state resources to the restoration, nourishment, and enhancement of state beaches through sand replacement activities.[98] The process of trucking or pumping sand onto eroding beaches – known as "beach nourishment" – is a long-time management tool with mixed results.[99] Sand replenishment projects are not only expensive and ecologically challenging, but are often very short-lived.[100] For instance, a $17.5 million, two-million cubic-yard sand replenishment project along a six-mile stretch of San Diego County coastline in the summer of 2001, and another at Torrey Pines State Beach down the road, quickly washed out to sea the following winter.[101]

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[98] Cal. Harb. & Nav. § 69.5–69.9.

[99] *See e.g., 2015 California Coastal Armoring Report, supra* n.47, at 12, fn.54 (and publications cited therein).

[100] Gary Griggs, *California's Retreating Coastline: Where Do We Go from Here?, supra* n.48, at 4.

[101] Dave Downey, *2001 Beach Benefits Short-lived*, The San Diego Union Tribute (Mar. 18, 2007), *available at* http://www.sandiegouniontribune.com/news/2007/mar/18/2001-beach-benefits-short-lived/.

Today, state and federal agencies are contemplating an expensive, ongoing 50-year beach nourishment program along Encinitas and Solano Beach to combat sea level rise and future El Niño weather patterns.[102] Coastal armoring along these beaches may, for the reasons discussed above, render this effort less effective and more costly than it might otherwise be. Over the next two decades, the Coastal Commission will have significant additional data on how seawalls like the one erected by Petitioner may impact this ambitious beach replenishment project and whether modifications are necessary to protect public resources. It was thus entirely reasonable for the Commission to condition its permit authorization for Petitioner's construction of a new seawall on the 20-year reopener.

CONCLUSION

As the Supreme Court of South Carolina recently acknowledged, "[o]ur State's tidelands are a precious public

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[102] Jared Whitlock, *50-Year Sand Project Reaches "Important Milestone,"* Encinitas Advocate (Apr. 28, 2015), *available at* http://www.encinitasadvocate.com/news/2015/apr/28/50-year-sand-project-milestone/; U.S. Army Corps of Engineers, *Final Integrated Feasibility Study and Final EIS/EIR, Coastal Storm Damage Reduction Project* (2015), *available at* http://www.spl.usace.army.mil/Missions/CivilWorks/ProjectsStudies/SolanaEncinitasShorelineStudy.aspx.

resource held in trust for the people" and they "present a bounty of benefits to the people ranging from environmental to recreational."[103] The same concerns animated the Coastal Commission's reasonable balancing of interests in this case. This Court should follow the lead of its sister court and affirm the permissibility of the 20-year reopener condition in Petitioner's coastal develop permit. That condition is eminently reasonable and necessary to protect public lands in light of the undisputed negative externalities associated with coastal armoring and the significant uncertainties around sea level rise and shoreline erosion along the California coast.

Date: Aug. 5, 2015

Respectfully submitted,

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[103] *Kiawah Dev. Partners, II v. S. Carolina Dep't of Health & Envtl. Control* (2014) 411 S.C. 16, 22, 44 (reversing lower court order finding that agency erred in denying majority of permit for bulkhead and revetment).

CERTIFICATE OF WORD COUNT

Pursuant to Rule 8.520(c)(1) of the California Rules of Court, I hereby certify that this brief contains 7,474 words, including footnotes, but excluding the Application, Tables, and Certificates. I have relied on the word count of the Microsoft Word program used to prepare this Certificate.

DATED: Aug. 6, 2015

Deborah A. Sivas

PROOF OF SERVICE

DEBORAH A. SIVAS declares:

I am over the age of eighteen years and not a party to this action. My business address is 559 Nathan Abbott Way, Stanford, California 94305-8610.

On August 6, 2015, I served the foregoing **SURFRIDER FOUNDATION'S APPLICATION FOR LEAVE TO FILE *AMICUS CURIAE* BRIEF AND [PROPOSED] BRIEF IN SUPPORT OF RESPONDENT CALIFORNIA COASTAL COMMISSION** on each persona identified below by placing a true and correct copy thereof in a sealed envelope, with postage thereon fully prepaid, in the United States Mail at Stanford, California, addressed respectively to each recipient as follows:

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I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and that this declaration was executed Agust 6, 2015 at Stanford, California.

DEBORAH A. SIVAS