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A Southern California Surfer's Perspective On Marine Spatial Planning

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A SOUTHERN CALIFORNIA SURFER'S PERSPECTIVE ON MARINE SPATIAL PLANNING

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ABSTRACT

Increasing intensity in the use of ocean spaces and coastal development presents a threat to recreational uses of the ocean, such as surfing, diving, and snorkeling. Ocean recreational use brings an immense economic benefit to coastal communities. Coastal and Marine Spatial Planning provides a way to protect ocean recreational uses that cannot be replicated elsewhere. There are current legal authorities that permit state and federal agencies to conduct Coastal and Marine Spatial Planning. However, there are improvements that could be made. This Article makes several recommendations of ways to implement Coastal and Marine Spatial Planning to protect ocean recreational resources from destruction and degradation from competing ocean uses and coastal development.

TABLE OF CONTENTS

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I. INTRODUCTION

An oncoming wave builds ever higher; what was once a small ripple on the water is now a four-foot tower heading towards me. This is the wave I was waiting for. I begin to paddle fluidly through the water, alternating arms to get as much speed as I can. To propel myself forward, my hands are cupped to force as much water as I can behind me. The board beneath me starts to glide effortlessly from the combined forces of the wave and my efforts, and I know that it is time to pop up. I am up in an instant, with an exhilarating drop onto the face of the wave. I let out a "whoop!" The board is on the perfect spot of this right-hander. We are grooving, keeping up the perfect momentum with the whitewater breaking behind and glassy turquoise wave ahead. I become perceptive in this idyllic moment. I look down to observe the turquoise water and spot small brown fishes and a few rocks. This is the moment that surfers live for on Doheny's waves—being present in the ocean's splendor. As fleeting moments are, this one too ends as I step off my board into the waters.

I have only known Doheny's waters as the casual longboarder's beach break just outside of the Dana Point harbor entrance with poor water quality and a struggling ecology,[1] but other longtime

1. The surfing area of Doheny State Beach has four areas where water quality monitoring is performed on a weekly basis. Over the past year, Doheny's grades

surfers have known it as something much different—the legend of Killer Dana, a surf break that is no more. The last several decades of coastal development and increasing intensity of use of ocean spaces have resulted in severe degradation of California's ocean resources for recreational users, especially those involved in water-contact activities. Recreational ocean use is also a large part of the economy of Southern California. The current Marine Protected Area network has been successful in promoting growth of sea life and water quality in the coastal areas of this region. Additionally, a myriad of federal statutes and the California Coastal Act provides legal protection for recreational uses of the ocean and authority for undertaking Coastal and Marine Spatial Planning.[2] However, greater demands on use of the ocean and increasing pressure to expand coastal development will require protective measures beyond what is currently in place. A robust system of integrated Coastal and Marine Spatial Planning is needed to promote efficiency for all ocean users and mitigate adverse effects on recreational users and sea life.

I exhale and come back to the surface and climb back on my board. I begin the long paddle out all over again, ready to capture another idyllic moment. The water is really warm, with a slight breeze blowing warm desert air off the land on an otherwise cool morning. I am wearing boardshorts because it is September, and who wants to wear a wetsuit when they do not have to? I find a good spot in the water to catch my breath and wait for the next wave and take in the calm morning. While observing the ocean's splendor, I scan the water for wildlife. Some of my favorite mornings have been when the dolphins or seals try to catch the waves alongside the surfers. It is not yet whale season, so I won't get to see any humpback tails splash the water or spouts from whales coming up for air just yet. I can sense the numerous boats motoring out behind the rock jetty to the north. They will have smooth sailing today. It is an otherwise beautiful day at Doheny State Beach, which is a beach break with a sandy ocean floor known for good

range from B to A+ for the summer dry season, and reaching as low as C and D for the winter dry season, and then scoring failing grades following wet weather. Heal the Bay, 2017-2018 BEACH REPORT CARD 58 (2018). I changed the wording of this, as the chart on pg. 53 indicates some parts of Doheny scored grades in the A's for the winter dry and wet weather columns. Doheny had been listed in the top ten worst water quality beaches in California leading up to 2013, but its water quality has improved since then. *Id.* at 53.

2. CAL. PUB. RES. CODE § 30220 (West 2020). *See also*, JOHN M. BOEHNERT, ZONING THE OCEANS: THE NEXT BIG STEP IN COASTAL ZONE MANAGEMENT 114-16 (2013).

longboarding waves and welcome to everybody, from beginners to those who want a casual, laid-back surfing experience. I came here this morning because it is only fourteen minutes by car from my home to the waves, and this particular day I wanted the easy surf for relaxation, not the more technical experience required by my other favorite South County spots, although those other spots may present a more pristine environment.

The natural beauty of Doheny, like many other spots, is marred by the signs of an ailing ecosystem. As I continue to look around me for the elusive wildlife, the evidence of anthropogenic pollution is apparent. There is floating plastic that I paddle over to pick up and see if I can stuff the trash inside my pocket to properly dispose of when I get back to the beach. Most alarmingly, I see a brown fuzzy-like surface scum building up on my legs as I sit on my board atop the water. My thought is that I will just rinse it off when I get to the parking lot shower. No worries, just enjoy the morning. However, in the back of my mind, I know that something is not quite right.

This Article explores the background of coastal development and ocean use in Southern California in the twentieth century and the negative effects that it has had on the ocean quality for wildlife and recreational users. It will focus on water contact recreational uses, which include swimming, surfing, and diving.[3] It will also discuss the benefits and shortcomings of past and current preservation initiatives, such as regulation of coastal development, the use of Marine Protected Areas to preserve ocean spaces and protect wildlife, and new initiatives such as "Surfing Reserves" to protect specific areas for recreational users. Next, the Article will discuss how Marine Spatial Planning and integrated coastal development can work together to preserve and protect areas for the ever-increasing recreational use of the ocean. Finally, the Article will discuss specific proposals such as adaptive zoning of ocean spaces, greater controls on development in coastal counties and municipalities, and how technology can help implement and enforce these regulatory schemes.

3. For the purposes of this Article, "surfing" is a broad category that encompasses various sports such as wave riding on a surfboard or stand-up paddleboard, skimboarding, bodyboarding, and bodysurfing. "Diving" includes all various types of diving and snorkeling activities. Beyond traditional snorkeling and SCUBA diving, new technologies enable other hybrid activities such as "SNUBA," which is underwater diving where the diver breathes through a tube connected to an air chamber at the surface. *See e.g.*, *Snuba Diving Adventure*, CATALINA TOURS, https://www.catalinatours.com/tour/snuba-diving-adventure/ (last visited Feb. 9, 2020).

II. BACKGROUND

When Richard Dana sailed the California coast on the merchant ship *Pilgrim* in the 1830s, he described a pastoral wilderness with some agricultural uses. San Pedro was little more than a couple of houses and a place to offload cargo for the journey over bumpy roads to the settlement of Los Angeles. San Diego, San Francisco, and Santa Barbara were small port towns where farmers and merchants traded cow hides to be taken back to the East Coast for leatherworking. It was easier to travel by boat between these towns than to attempt to journey over land.[4]

Detailing life in the Laguna Beach area at the close of the nineteenth century, James Thurston's notes describe a difficult agricultural existence along the coast with a small but growing summer transient population.[5] This all changed in the twentieth century with the development of the automobile and westward migration after World War II, causing an explosion of development and population in Southern California that contributed to poor water quality, pollution, and harm to ocean wildlife.

A. Recreational Water-Contact Uses of the Ocean

California has long had association with recreational use of the ocean. Dana describes what may be the first instance of "surfing" in California—sailors from Hawai'i riding waves in canoes as they come ashore in Santa Barbara.[6] About a half-century later, the first documented board riders, three Hawaiian princes, took to the waves in Santa Cruz.[7] In the early twentieth century, Hawaiian surfers Duke Kahanamoku and George Freeth popularized surfing—then a pastime little known outside of Hawaii—in the mainland of Southern California.[8] Since then, the number of surfers has

4. *See generally* Richard Dana, TWO YEARS BEFORE THE MAST (Charles W. Eliot 62d printing. 1969) (1840) (noting observations of North America while aboard Pilgrim).

5. *See* J.S. Thurston, LAGUNA BEACH OF EARLY DAYS 38-41 (The History Press 2017) (1947) (describing duties on farm and influx of new neighbors).

6. Dana, *supra* note 4, at 58-60. Dana describes observing "a crew of dusky Sandwich Islanders [Hawaiians][,]" who, when arriving in Santa Barbara, "went in on top of the great wave, throwing their oars overboard, and as far from the boat as they could throw them, and jumping out the instant that the boat touched the beach." *Id.* at 59.

7. Ben Marcus, *Surf City North*, SANTA CRUZ: WORLD SURFING RESERVE (2012). On July 19, 1885, the princes "shaped redwood planks from a local lumber mill into rideable boards" for their historic surf. *Id.*

8. Chad Nelsen, Linwood Pendleton, & Ryan Vaughn, *A Socioeconomic Study of Surfers at Trestles Beach*, 75 SHORE & BEACH, No. 4, 2007, at 32.

swelled along with the population.[9] Even in the 1960s, filmmaker and *The Endless Summer* narrator Bruce Brown described the crowded conditions seen at popular surf breaks such as Malibu.[10] This is even more true today. While the true number of surfers is hard to quantify, studies indicate that there are upwards of 2.5 million surfers in the United States.[11] Participation in the sport is growing at a rapid rate, with an estimated forty percent increase in the number of surfers between 2004 – 2016.[12] Surfing is a big industry as well, with surfers worldwide spending $13 billion on surfing equipment, clothing, and travel.[13] Surfing and its related water-contact sports have very specific requirements. Not only must there be good water quality, there must also be suitable wave quality, known as "surfability." Thus, surfing can be practiced in a much smaller range of areas than open-water swimming.[14]

SCUBA diving was a more recent development than surfing, as the technology that allows for breathing underwater used today was developed during World War II.[15] It gained popularity in the United States starting in the 1950s.[16] According to studies by a diving trade association, there are approximately three million active

9. In 1960, Los Angeles and Orange Counties together had just over 6.7 million residents. By 2010, that has increased to almost 13 million residents, with much more dramatic population growth in Orange County. *Historical Census Populations of California, Counties, and Incorporated Cities, 1850-2010*, Cal. Dep't of Fin., www.dof.ca.gov/Reports/Demographic. . ./2010-1850_STCO_IncCities-FINAL.xls (last visited Feb. 9, 2020).

10. Bruce Brown & Robert Badgley, THE ENDLESS SUMMER (June 15, 1966).

11. *How Many Surfers Are there in the World?*, SURFER TODAY, https://www.surfertoday.com/surfing/14228-how-many-surfers-are-there-in-the-world (last visited Feb. 10, 2020) (discussing difficulties in quantifying surfers and estimating 2.8 surfers in United States); Josh Saul, *Surfin' USA: Waves Crowded as Number of Surfers Surges*, NEWSWEEK (July 23, 2016, 8:30 AM), https://www.newsweek.com/surfer-increase-waves-crowded-congested-trestles-477005 (citing study done by Surf Industry Manufacturers Association). Studies differ on how they define a "surfer." California alone probably accounts for almost half of the number of American surfers based on a NOAA study conducted in 2000. Chad Nelsen, *How Many Surfers?*, SURFRIDER FOUND. (Feb. 16, 2009), https://www.surfrider.org/coastal-blog/entry/how-many-surfers.

12. Saul, *supra* note 11.

13. Andrew T. Warren & Chris R. Gibson, *Subcultural Enterprises, Brand Value, and Limits to Financialized Growth: The Rise and Fall of Corporate Surfing Brands*, 86 GEOFORUM 177, 179 (2017), https://ro.uow.edu.au/cgi/viewcontent.cgi?article=4329&context=sspapers.

14. For a discussion of factors that make for a "surfable" wave, such as peel angle and breaking intensity, *see* Scott Ball, *The Green Room: A Surfing-Conscious Approach to Coastal and Marine Management*, 33 UCLA J. ENVTL. L. & POL'Y 366, 369-74 (2015).

15. *Scuba Diving*, MARINEBIO CONSERVATION SOC'Y, http://marinebio.org/oceans/scuba/ (last visited Oct. 14, 2018).

16. *Id.*

divers in the United States and about eleven million snorkelers.[17] Within the United States, scuba diving and snorkeling contribute approximately $11 billion annually to the economy.[18]

1. Degradation of Diving Resources

All water contact users are impacted by water quality from both a human health and aesthetic standpoint. Additionally, diving is best conducted in areas that have vibrant underwater ecosystems, such as Southern California's rocky reefs and kelp forests. Thus, measures that preserve these ecosystems also draw recreational users to those areas for diving and snorkeling. Conversely, poor water quality also causes an area to become unsuitable for diving activities. Presently, the biggest impact on water quality has come from oil industry activity and storm water runoff from coastal development.

Petroleum spills have had a devastating and far-reaching impact on water quality. In Southern California, there are currently thirty-one oil platforms or artificial islands.[19] As recent as 2015, an oil pipeline ruptured at an offshore oil platform near Refugio State Beach in Santa Barbara County.[20] The pipeline rupture spilled over 100,000 gallons of petroleum into the water and created a nine square mile oil slick.[21] This prompted beach closures and severely impacted wildlife in the area, resulting in death or injury to numerous birds and marine mammals.[22] During the same week, oil tar balls washed up in the South Bay area of Los Angeles and as far away as Long Beach which is one hundred miles from the site of the

17. *Fast Facts: Recreational Scuba Diving and Snorkeling*, DIVING EQUIP.& MKTG. ASS'N (DEMA) (2018), //www.dema.org/store/download.aspx?id=7811B097-8882-4707-A160-F999B49614B6.

18. *Id.*

19. Laurel Rosenhall, *California Taxpayers Could Foot the Bill to Shutter Old Oil Rigs off the Central Coast*, THE TRIBUNE (Feb. 6, 2018, 11:24 AM), https://www.sanluisobispo.com/news/local/environment/article198660034.html.

20. *Id.*

21. Paul Vercammen & Pat St. Claire, *Wildlife, Pristine Beaches Focus of 'Aggressive' Oil Spill Cleanup*, CNN (May 20, 2015, 10:36 PM), https://www.cnn.com/2015/05/20/us/california-oil-spill/index.html.

22. *See* Chris Woodyard and Becca Smouse, *Tar Balls Close Calif. Beach 100 Miles from Oil Spill*, USA TODAY (June 4, 2015, 6:46 PM), https://www.usatoday.com/story/news/nation/2015/06/04/oil-spill-tar-balls-long-beach/28455279/ (noting adverse effects of oil spill in Refugio State Beach area). The spill claimed the lives of "[eighty-seven] birds and [fifty-three marine] mammals, mostly sea lions. In addition, [fifty-eight] birds and [forty] mammals were recovered fouled by the oil, but still alive, according to the Oiled Wildlife Care Network operated through the University of California, Davis' school of Veterinary Medicine." *Id.*

spill.[23] The nearshore environment off of Santa Barbara County and the Channel Islands, which were affected by the oil spill, are a popular diving location due to their kelp forests and abundance of wildlife.[24] Even if a particular offshore oil platform did not have any problems with pipeline ruptures, the decommissioning process for oil platforms results in further ocean contamination that cannot be fully mitigated.[25]

Besides pollution effects from offshore oil drilling operations, oil tankers also present a potential oil pollution threat.[26] Oil tankers conduct "lightering" in the Pacific Lightering Zone, which is about twenty miles southwest of Catalina Island.[27] Lightering involves the transfer of oil at sea from a large tanker ship onto a smaller tanker ship that can enter the port.[28] This creates the po-

23. *Id.*; *see also* Evan Simon, *Oily Substance on California Beach Prompts Officials to Close Coastline*, ABC NEWS (May 28, 2015, 10:54 AM), https://abcnews.go.com/US/oily-substance-california-beach-prompts-officials-close-coastline/story?id=31360913 (noting that while oil tar balls had not been officially connected to oil pipeline rupture, they were not result of natural seepage). The author of the present Article was personally impacted by this event while attempting to go surf in Manhattan Beach, CA and was turned at the water's edge by a lifeguard enforcing the beach closure. Over the next few days, as the cleanup progressed, the author witnessed the cleanup crews on the beach while there were dozens of surfers at the break who ignored the closure so they could surf decent waves without crowded conditions.

24. *See Snorkeling Santa Barbara, Central California*, GONE SNORKELING, https://www.gonesnorkeling.com/destinations/usa/california/santa-barbara/ (last visited Feb. 15, 2020) (calling forests "great spot for sightseers and photographers looking for rockfish, sheephead and cabezon"); *see Refugio State Beach*, PARADISE DIVE CLUB, https://www.paradisediveclub.org/local-dives/refugio-state-beach/ (last visited Feb. 15, 2020) (describing access to Refugio State Beach dive site); National Park Service, *Diving and Snorkeling*, CHANNEL ISLANDS, https://www.nps.gov/chis/planyourvisit/diving.htm (last visited Feb. 15, 2020).

25. Brock B. Bernstein, et. al., *Evaluating Alternatives for Decommissioning California's Oil and Gas Platforms*, 54 (2010), http://www.oceansciencetrust.org/wp-content/uploads/2015/05/OilandGas_DecommissioningFullReportWithAppen .pdf (discussing contamination concerns presented by removal of shell mounds from oil platforms, which are required to be removed by platform operator during decommissioning).

26. *See* Tony Barboza, *Chevron Seeks 30-Year Off-shore Lease Extension*, L.A. TIMES (Dec. 10, 2018), http://articles.latimes.com/2010/dec/10/local/la-me-chevron-tankers-20101210 (discussing that in Los Angeles South Bay, oil tankers offload oil at offshore pipeline near the Chevron refinery in El Segundo and periodic oil spills have occurred).

27. Brian Meux, et. al., *Crude Awakenings Oil Spill Prevent and Response in Los Angeles County's Marine Environment*, LOS ANGELES WATERKEEPER 18-19 (2013), https://lawaterkeeper.org/wp-content/uploads/2013/09/Crude-Awakenings1 .pdf.

28. *Id.* at 17–19. *See* 46 U.S.C.A. § 3715 (2019); 33 C.F.R. § 156.225 (2019) (authorizing Coast Guard District Commander with authority to designate lightering zones); *see also* 33 C.F.R. § 156.230 (providing factors to consider in designation of lightering zones).

tential for a spill that would not be able to be as easily contained as a spill in port.[29]

While petroleum spills are relatively rare, ocean users are commonly impacted by poor water quality following significant rains due to storm water runoff.[30] After a rainstorm, water quality at most beaches in Southern California is rated as failing.[31] Additionally, advisories are commonly issued to warn recreational users not to enter the water for seventy-two hours following a rain event.[32] This is due to bacteria present in the water from urban runoff that can cause human health concerns such as infections.[33] Poor water quality can also harm the ecosystem in coastal areas. The decline of kelp forest ecosystems near populated areas of Southern California during the twentieth century is attributed in part to discharge of sewage into the ocean.[34] Most divers engage in the activity for the chance to see unique underwater scenery, such as giant kelp forests and the sea creatures that inhabit them.[35] The kelp forest ecosystems have improved in recent years with major upgrades to sewage

29. Meux, et. al., *supra* note 27, at 18–19 (discussing likelihood of major spill from lightering area affecting many Southern California shorelines).

30. *See, e.g.*, Robert Koviak & Heather Navarro, *SoCal Beach Closure Extended Further South After Waste Washes Ashore*, NBC LOS ANGELES (Sep. 24, 2015, 9:31 PM), *https://www.nbclosangeles.com/news/local/tampons-condoms-beach-closed-socal-closures-329007491.html* (discussing waste found washing ashore near South Bay of Los Angeles after sewage diversion following wet weather).

31. *See Heal the Bay*, *supra* note 1, at 51-63 (listing grades by county during wet weather); *see, e.g.*, Laylan Connally, *Rain Advisory in Place for Orange County Beaches and Harbors*, ORANGE CTY. REGISTER (Feb. 27, 2018, 10:33 AM), https://www.ocregister.com/2018/02/27/rain-advisory-in-place-for-orange-county-beaches-and-harbors/ (warning swimmers to stay away from beach due to elevated levels of bacteria).

32. *See id.* (explaining length of poor water quality varies depending on intensity of rain and volume of runoff).

33. *Frequently Asked Questions*, ORANGE CTY. HEALTH CARE AGENCY (2019), https://ocbeachinfo.com/faq/#1460419230216-0a77e3da-dc90 (discussing water quality testing methods and the types of infections various bacteria or viruses that can be present in the water, most of which can cause gastrointestinal illness if ingested).

34. Michael S. Foster & David R. Schiel, *Loss of Predators and the Collapse of Southern California Kelp Forests: Alternatives, Explanations, and Generalizations*, 393 J. OF EXPERIMENTAL MARINE BIOLOGY & ECOLOGY 59, 62-63 (2010), https://courses.pbsci.ucsc.edu/eeb/bioe161/wp-content/uploads/2012/12/Foster-Michael.-Loss-of-predators-and-the-collapse-of-souther-California-kelp-forests-Alternatives-explanations-and-generalizations.pdf.

35. *See, e.g.*, *Snorkeling Santa Barbara, Central California*, *supra* note 24 (describing area's appeal to divers); *Dive Sites – Southern California*, BEACH CITIES SCUBA, https://www.beachcitiesscuba.com/pages/dive-sites (last visited Feb. 15, 2020).

treatment in urban areas, which reduces pollutant discharge.[36] However, water quality continues to remain a concern.

Another factor especially important to diving activities (and surfing activities, to some extent) is that overharvesting of resources can cause a spot to become less desirable for diving activities, as there is less of a draw than there would normally be in a vibrant ecosystem. Overharvesting of species within an ecosystem can have a substantial impact on the health of the entire ecosystem because it allows some invasive or predator species to grow unchecked.[37] A vibrant underwater ecosystem, such as a kelp forest or rocky reef full of aquatic life is attractive for divers whereas an area devoid of sea life is not. Additionally, some divers engage in activities such as recreational spearfishing or harvesting rock lobster. California has a history of commercial overharvesting of creatures that were once plentiful along the whole range of the Pacific coast, such as sea otters, rockfish, abalone, and other fish.[38] Giant kelp beds are a keystone species because they provide the key source of food for animals in the rocky reef habitat.[39] Overharvesting upsets the balance of a healthy ecosystem, can result in eradication of kelp forests through unchecked predation, and also makes an area less desirable for snorkeling and diving.[40]

In addition to water quality, one of the largest impacts to coastal nearshore ecosystems in Southern California has been sedimentation caused by extensive development in coastal areas.[41] Development that encroaches on streams or inland creeks causes erosion, which may lead to potentially pollutive sediments flowing

36. *See* Foster & Schiel, *supra* note 34, at 63-64, 66 (discussing recovery of kelp forest beds near Los Angeles and San Diego after improvements in water quality following water treatment system upgrades such as discharge further offshore into deeper waters, but sedimentation may still have adverse effects).

37. *Id.* at 60 (discussing how sea urchins, if unchecked by predators such as abalone, lobster, and sheephead fish, can decimate kelp forests).

38. *See, e.g.*, Howard Powles, et al., *Assessing and Protecting Endangered Marine Species*, 57 ICES J. OF MARINE SCI. 669, 670 (2000), *https://academic.oup.com/icesjms/article/57/3/669/635955* (discussing sea otters, abalone).

39. Mary E. Power, et. al., *Challenges in the Quest for Keystones*, 46 BIOSCIENCE 609, 614-615 (No. 8, Sept. 1996), *https://academic.oup.com/bioscience/article/46/8/609/237132*.

40. M.J. Tenger & P.K. Dayton, *Ecosystem Effects of Fishing in Kelp Forest Communities*, 57 ICES J. OF MARINE SCI. 579, 580-82 (2000), http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.577.3088&rep=rep1&type=pdf (discussing how localized extinction of sea otters in Southern California waters caused unchecked predation of giant kelp beds).

41. Rikk Kvitek, et. al., *Final Report and GIS User's Guide*, SANTA MONICA BAY MAPPING PROJECT 3 (Feb. 17, 2003), http://seafloor.otterlabs.org/publications/SMBMP_Final_Report.pdf; Foster & Schiel, *supra* note 34, at 62-63.

out to the ocean that would not otherwise be present.[42] One of the problems that this presents in an ecosystem is that even small layers of foreign sedimentation on the ocean floor can inhibit growth of new kelp.[43] Conversely, development projects like dams can also inhibit sediment, which provides natural beach nourishment, from reaching the ocean, altering the habitat of native fish.[44]

2. Destruction or Degradation of Surfing Breaks

Surfing breaks are unique because they are a rarity in the world. Most beach areas are not suitable for surfing.[45] This is because surfing breaks require a specific combination of underwater topography, sediment, swell, and beach direction to generate waves useful for surfing.[46] Additionally, only certain locations have the proper wind direction and intensity (usually light, offshore winds) to make for decent surf conditions.[47] When a surf break is completely eliminated, or conditions deteriorate such that the waves are lower quality, the lost break cannot be replaced.[48]

While the number of surfers has increased, the number of surfing breaks has decreased to make way for ocean development. Two prime examples of this are the installation of the breakwater to protect the port and beachfront property in Long Beach and the con-

42. *See, e.g.*, Stanley W. Trimble, *Contribution of Stream Channel Erosion to Sediment Yield from an Urbanizing Watershed*, 278 SCIENCE 442, 1442-44 (Nov. 21, 1997) (discussing measurement of sediment yield through Newport Bay watershed and resulting effects); *see also* Erin J. Nelson & Derek Booth, *Sediment Sources in an Urbanizing, Mixed Land-Use Watershed*, 264 J. OF HYDROLOGY 51, 61 (July 30, 2002).

43. *Id.*; *see generally* Alexa Fredston-Hermann, et. al., *Where Does River Runoff Matter for Marine Coastal Conservation?*, 3 FRONTIERS IN MARINE SCI. 1, 2 (Dec. 27, 2016), https://www.frontiersin.org/articles/10.3389/fmars.2016.00273/full (describing how nutrient additions can lead to harmful algal blooms that create hostile environments for coral development).

44. *See* Shane Anderson, *Environmental Characteristics of Malibu*, MALIBU: WORLD SURFING RESERVE (2010) (discussing restrictive effect of Rindge Dam on Malibu waters).

45. *See* Ball, *supra* note 14, at 369-70 (explaining differences in beaches make not all ideal for surfing); Chad Nelsen, Andy Cummins, & Hugo Tagholm, *Paradise Lost: Threatened Waves and the Need for Global Surf Protection*, 1 J. OF COASTAL RESEARCH, No. 65, Apr. 1, 2013, at 905 (noting that "surfers are extremely particular about their beach choice based on numerous oceanographic, meteorological, surf and social conditions. As a result environmental impacts such as water quality impairment or changes in beach processes from coastal development will likely impact the beach choice, and thus the economic values and contributions, of surfers differently than other beach goers[ ]").

46. *Id.*

47. *Id.*

48. *Id.* at 382.

struction of the harbor in Dana Point.[49] In the 1940s, two sections of breakwater were constructed to complement a breakwater at the mouth of the San Pedro harbor. At the time, Long Beach had been a popular surfing location. Its waves were compared to Waikiki, the gentle, rolling wave in Hawaii, and it even hosted a world surfing tournament.[50] However, with the construction of the Long Beach breakwater on behalf of the U.S. Navy, the result was an end to Long Beach's surfing and diminished water quality from poor circulation.[51]

By the 1960s, Dana Point, California (named for Richard Dana, who took a particular liking to the area) was an epicenter for the development of the sport of surfing.[52] However, Dana Point's famous surfing break "Killer Dana" suffered a similar fate as Long Beach in the late 1960s when the county constructed a breakwater for a new harbor in Dana Point.[53] In those days, public opinion on

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49. Long Beach and Dana Point are the two examples that have likely impacted the most people based on their location near population centers. *See Welcome to Stanley's Reef Found. Web Page*, STANLEY'S REEF FOUNDATION (Oct. 7, 2008), http://www.stanleysreef.org/ (discussing destruction of Stanley's Reef surfing spot in Ventura County, CA in 1970 to make way for extension of 101 Freeway). Notably, the Stanley's Reef Foundation is working on establishing an artificial reef to produce a surfable wave near the original location of Stanley's Reef, but artificial reefs have limited success in producing a quality wave. *See* Ball, *supra* note 14, at 383 (citing Jim's Blog, *Do Artificial Surfing Reefs Work?*, SURFRIDER FOUND. (Dec. 3, 2009)) (discussing failed attempts to create artificial surfing reefs); B.E. Scarfe, et al., *Sustainable Management of Surfing Breaks – An Overview*, 1 REEF J. 44, 58 (2009) (discussing developer compensation due to destruction of surfing bank). *See also* Martin Wisckol, *210-acre Artificial Reef Approved for San Clemente Despite Surfers' Concerns*, ORANGE CTY. REGISTER (Mar. 7, 2019, 3:43 PM), https://www.ocregister.com/2019/03/07/210-acre-artificial-reef-approved-for-san-clemente-despite-surfers-concerns/ (discussing Surfrider Foundation allegation that half-mile offshore artificial reef could have negative impacts on windswell (short-period waves) at San Clemente). Reef proponents countered that the "chop" would be reduced, making waves less bumpy. *Id.* Reef proponents also asserted that divers and fisherman would also benefit from reef installation and corresponding new kelp habitat. *Id.*

50. Martin Wisckol, *Removal of Long Beach Breakwater Could be on the Rocks*, PRESS-TELEGRAM (June 20, 2018, 1:03 PM), https://www.presstelegram.com/2018/06/20/removal-of-long-beach-breakwater-could-be-on-the-rocks/.

51. *Id.*; *see also* Heal the Bay, *supra* note 1, at 60 (describing Long Beach's current water quality to be decent (A-B range) in dry summer weather but poor in dry winter weather (A-D range) and wet weather (D-F range)).

52. Bruce Beal & Marlene Beal, *Ocean Heritage Paper & Projects Surfing and Sailing*, DANA POINT HISTORICAL SOCIETY (2017), https://hobiememorial.com/wp-content/uploads/2017/06/Oceanic-Heritage-Paper-Projects-WEBSITE-2017.03.28.pdf.

53. Imran Ghori & Christopher Earley, *Birth of Dana Point Harbor Meant Death of a Killer Wave*, ORANGE CTY. REGISTER (Aug. 10, 2014, 6:36 PM), https://www.ocregister.com/2014/08/10/birth-of-dana-point-harbor-meant-death-of-a-killer-wave/.

municipal development was not considered as it is today.[54] Regardless, the surfing community attempted to modify the project to preserve the surf break by contacting the county officials overseeing the project.[55] However, the Orange County officials in charge of the project were not sympathetic to the surfers' cause, and the harbor's construction put an end to the surfing break.[56] Long Beach and the Dana Point harbor are not the only surf spots to be completely eliminated by ocean development in Southern California, but they are two of the most prominent examples.[57]

Presently, the wholesale destruction of entire surfing breaks through ocean development is not the proximate cause of deterioration of conditions at many locations. As with diving locations, surfing breaks are also affected by degradation of water quality from other ocean uses and water pollution from shore-based stormwater runoff. Additionally, while many surfers do not primarily surf for the chance to see marine wildlife, it does enhance the experience.[58] Unique to surfing as opposed to swimming and diving is the fact that surfing breaks are affected by differences in the contour of the ocean floor (bathymetry). Bathymetry is affected when sedimentation flows from creeks and the nearshore environ-

54. *See id.* (discussing how outcry from local surfers in protest of breakwater fell on deaf ears). *See* CAL. PUB. RES. CODE § 21003.1 (West 2020). The public comment provisions of the California Environmental Quality Act for environmental effects of projects was implemented in 1985. Cal. Stats. 1985 c. 85, § 1 (requiring comments from public and public agencies regarding environmental effects of a project to be reported lead agencies).

55. Ghori & Earley, *supra* note 53 (stating well-known surfer Ron Drummond went to county's director of harbors and beaches with alternative plan for breakwater).

56. *Id. See also* Chad Edward Nelsen, Collecting and Using Economic Information to Guide the Management of Coastal Recreational Resources in California (2012), 2-3 (unpublished Ph.D. dissertation, University of California Los Angeles) (on file with Surfrider Foundation) (positing that "[t]he market values associated with development of the harbor were understood but the non-market value of the negative impact to the coastal environment and recreation were largely given a zero value[ ]").

57. *See, e.g.* Michael L. Blum, Protecting Surf Breaks and Surfing Areas in California (May 2015), 11-12 (unpublished Masters project, Duke University) (discussing loss of surfing break at Corona Del Mar with construction of jetties for Newport Harbor and Stanley's Reef because of highway extension). State Beach in Los Angeles was also rendered unsurfable because of the widening of a breakwater and the realignment of Pacific Coast Highway (PCH). *Id.* In addition, parking lot construction eliminated Hoshi's Reef in Los Angeles County. *Id.*

58. While popular culture focuses mostly on conflict between surfers and sharks, many surfers delight in the chance to see wildlife during their session. This is especially true for paddleboarders. Dolphins, seals, and small fish are the most commonly sighted sea life, with the occasional whale sighting.

ment, causing alterations to the waves.[59] Construction along the coast, such as coastal development or armoring projects (jetties, seawalls, rip-rap, beach nourishment) has a usually negative impact on sediment flows and bathymetry at a surfing location.[60] As discussed for diving resources, human impact through development along a watershed also changes the flows of sediment in the nearshore environment.[61] While the effect on diving resources is indirect, affecting the ecosystem of the diving environment, the effect on surfing is direct because it affects the quality of the waves.[62] Since surfing is a water-contact sport, surfers are also affected by water quality in the same way that divers and snorkelers are.[63] Thus, poor water quality or bacteria in the water from urban runoff

59. Chad Nelsen, *Protecting Ocean Recreation and Surfing*, SURFRIDER FOUND.: SURF PROTECTION (Mar. 20, 2013), https://www.surfrider.org/coastal-blog/entry/protecting-ocean-recreation-and-surfing; B.E. Scarfe, et. al., *The Science of Surfing Waves and Surfing Breaks – A Review*, UNIVERSITY OF CALIFORNIA SAN DIEGO: SCRIPPS INSTITUTION OF OCEANOGRAPHY TECHNICAL REPORT 6 (Mar. 7, 2003), https://escholarship.org/content/qt6h72j1fz/qt6h72j1fz.pdf (discussing rarity of quality surfable wave because many beaches lack interesting bathrythmic features). For a scientific discussion, *see* Andrew D. Short, *Coastal Processes and Beaches*, THE NATURE EDUCATION KNOWLEDGE PROJECT (2012), https://www.nature.com/scitable/knowledge/library/coastal-processes-and-beaches-26276621 (explaining how waves are caused by winds blowing over ocean surface); Edward J. Anthony, *Sediment-Wave Parametric Characterization of Beaches*, 14 J. OF COASTAL RESEARCH 347 (1998) (explaining parameters to measure beach waves). *See also* TONY BUTT, SURF SCIENCE: AN INTRODUCTION TO WAVES FOR SURFING 52-54 (3D ED. 2014) (discussing how contour of ocean floor affects wave formation).

60. Nicholas P. Corne, *The Implications of Coastal Protection and Development on Surfing*, 25 J. OF COASTAL RESEARCH 427, 431-32 (Mar. 2009), https://www.jcronline.org/doi/pdf/10.2112/07-0932.1 (analyzing detrimental effect most coastal armoring projects have on surfing wave quality); Scarfe, *supra* note 49, at 58 (discussing erosion control project at Chevron refinery in El Segundo, CA). *See also Dana Point Travel & Surf Guide*, SURFLINE, https://www.surfline.com/travel/united-states/california/orange-county/dana-point-surfing-and-beaches/5341483 (last visited Feb. 16, 2020) (positing that construction of resorts at outlet of Salt Creek in Dana Point, CA destroyed sand dunes and negatively impacted sand flow, decreasing wave quality accordingly).

61. Anderson, *supra* note 44 (discussing how Malibu Creek watershed affected sediment and formed Malibu).

62. *See* Nelsen, *supra* note 59 (discussing how over-development of watersheds "can impact water quality and limit sediment flow that provides sand and cobble that make up surf breaks and reefs[ ]"). *See also* BUTT, *supra* note 59.

63. *See* Benjamin Arnold, et. al., *Acute Illness in Surfers After Exposure to Seawater in Dry- and Wet-Weather Conditions*, 186 AM. J. OF EPIDEMIOLOGY 866 (May 11, 2017) (discussing study conducted on 654 surfers showing high incident rates of acute illness during dry weather and even higher incidence rates during wet weather); *see also* Katie Day, *Surfrider & UCLA Collaborate on Surfer Antibiotic Resistance Study!*, SURFRIDER FOUND. (Oct. 29, 2018), https://www.surfrider.org/coastal-blog/entry/surfrider-ucla-collaborate-on-surfer-antibiotic-resistance-study (discussing ongoing research into pathogen exposure that surfers face at Los Angeles beaches).

or petroleum spills also affects surfers and can result in closure of surfing areas.[64]

3. Economic Impact of Diving and Surfing Resources

In discussing the need for greater protection of ocean resources for water-contact recreational uses, it is important to quantify the economic impact that those resources present to the economy. This is because when a surfing or diving resource faces degradation in light of proposed development, there needs to be a quantifiable impact to measure against the economic impact or cost of the proposed development.[65] It is more so the pragmatic, quantifiable economic impact on a coastal community from a surfing or diving location that will sway whether a project goes forward, rather than intrinsic arguments such as the need for recreation or conservation of the environment.[66]

Diving resources provide a strong economic benefit to coastal communities. Divers spend money on equipment, training, parking, food, lodging, and guide services. The Diving Equipment and Marketing Association (DEMA) provides estimates on how much divers and snorkelers contribute to the California economy. DEMA estimates that 1.38 million dives occur in California in a year, with estimated direct expenditure ranging between $161 million to $323 million.[67] This amounts to an average between $116 and $234 spent per dive. Daily expenditures per diver in the Channel Islands National Marine Sanctuary range between $76 to $225 per day.[68] Snorkeling provides an even larger economic benefit to coastal communities. California hosts an estimated 3.82 million snorkeling days per year with estimated direct expenditure between $170 million to $382 million.[69] This amounts to an average between $44 and $100 per snorkeling trip.

Surfing also provides a strong economic benefit to the economy of coastal communities. Surfers are more avid ocean users than "typical beach goers" and also account "for more visits than

64. Heal the Bay, *supra* note 1, at 54-66 (listing water quality grades); *Frequently Asked Questions*, *supra* note 33 (explaining beach closures warranted depending on presence and extent of contamination).

65. Ball, *supra* note 14, at 398-99 (discussing need to highlight economic impact of surfing resources like other environmental resources).

66. *Id.* at 399 (discussing how "economic value [ ] is most likely to resonate with the general public and our society's decision-makers[ ]" regarding whether to proceed with development when it impacts surfing resources).

67. DEMA, *supra* note 17, at 7.

68. *Id.*

69. *Id.*

recreational fishing."[70] A 2011 study estimated that there were 3.3 million surfers in the United States who represented an economic benefit of $2 billion.[71] When the iconic surfing location Trestles was threatened by proposed extension of the 241 Toll Road in South Orange County, researchers from the University of California performed a study to quantify the impact that the surfing break brings to the town of San Clemente.[72] Surfers at Trestles produced a direct economic contribution of $8-12 million for the town of San Clemente in the form of "restaurants, shopping, buying gas, rentals and other beach-related incidentals" that then result in "jobs, wages, salaries and taxes" that would not occur but for the surfing resource.[73] Chad Nelsen concluded that the single surfing area had an economic value of between $21 million to $45 million.[74] Communities also receive revenue from parking fees at surfing locations and other coastal recreational activities that would be combined with a surfing trip.[75] The Trestles study provides insight into the economic impact created by a single surfing location and provides the economic impetus for preservation of the resource. The communities in both Huntington Beach in Orange County and Santa Cruz in Northern California understand well the economic boost that comes with surfing renown. The visitor's bureau of Huntington Beach spent $250,000 in legal fees to claim the title of "Surf City USA" from a Santa Cruz surf shop because of the economic boost the title, representing a premier surfing resource, provides for the community.[76]

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70. Nelsen, *supra* note 56, at 36.

71. Gregory Thomas, *Surfonomics Quantifies the Worth of Waves*, WASH. POST (Aug. 24, 2012), https://www.washingtonpost.com/surfonomics-quantifies-the-worth-of-waves/2012/08/23/86e335ca-ea2c-11e1-a80b-9f898562d010_story.html?noredirect=on&utm_term=.ba034203d909.

72. *See* Nelsen, *supra* note 56, at 196-97 (discussing means of surveying surfers); Nelsen, Pendleton, and Vaughn, *supra* note 8. *See also Landmark Agreement Ends 15-Year Dispute Over SR 241 Toll Road Extension* (hereinafter "*Landmark Agreement*"), THE TOLL ROADS OF ORANGE CTY. (Nov. 10, 2016), https://thetollroads.com/news/newsroom/press-release/820 (describing terms in agreement protecting San Onofre State Beach, Richard and Donna O'Neil Conservancy, and San Mateo watershed).

73. Nelsen, Pendleton, and Vaughn, *supra* note 8, at 35-36.

74. *Id.*; Nelsen, *supra* note 56, at 7, 51. Economic value is distinguished from direct economic impact because economic value represents the "net added value to society that the resource provides." *Id.* at 7-8. Economic value also quantifies the value of the ability to continue to use a resource, the ability to preserve a resource for future generations, or the sheer existence of the resource. *Id.* at 8-9.

75. *Id.* at 7.

76. Annie Burris, *Surf City USA Logo Lawsuit Cost $250,000*, ORANGE CTY. REGISTER (May 20, 2010), https://www.ocregister.com/2010/05/20/surf-city-usa-logo-lawsuit-cost-250000/.

Property values are enhanced by location near surfing and diving resources and negatively impacted by degradation of that resource. A case study from Rincón, Puerto Rico showed that surfers were drawn to purchase property in a community based on the community hosting a world-class surfing break and diving location.[77] This raised property values in the community, which led to more coastal development.[78] However, reesearchers proved that a proposed condominium development overlooking the break would create harmful effects on the break and would make the location less desirable and drive down property values.[79] Research conducted in Santa Cruz, CA showed that homes that are located within walking distance of a surfing break are more valuable than coastal homes located farther away from the surfing break.[80] Thus, preserving surf breaks also increases property value and tax revenue.[81]

Research on surfing and diving resources unequivocally shows that water-contact recreational users have a dramatic impact on the California economy. Additionally, these impacts demonstrate the need for conservation of these resources. Coastal and Marine Spatial Planning provides the optimal path to protecting these resources. The quantification of the economic value of recreational uses means that surfers and divers today have a greater potential impact to influence decisions on coastal development and ocean uses than they did in the mid-twentieth century.[82]

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77. Thomas, *supra* note 71; *see* Linwood Pendleton, *A Preliminary Study of the Value of Coastal Tourism in Rincón, Puerto Rico*, SURFRIDER FOUND. 7 (2002), https://rincon.surfrider.org/LP_study.pdf (discussing how many recurring seasonal visitors become part-time or full-time residents).

78. *See* Thomas, *supra* note 71 (discussing increased interest in Rincón real estate because of surfing).

79. *See id.* (predicting that without surf from the reef, there would be no tourists). *See* Pendleton, *supra* note 77, at 1-2 (describing how environmental degradation from unchecked development in areas dependent on coastal resources results in economic harms).

80. Jason Scorse, Frank Reynolds III, and Amanda Sackett, *The Impact of Surf Breaks on Home Prices in Santa Cruz, CA*, 21 TOURISM ECONOMICS 409, 416 (April 1, 2015), https://www.middlebury.edu/institute/sites/www.middlebury.edu.institute/files/2018-05/CBE%20SANTA%20CRUZ.pdf (concluding homes located near a surf break were worth over $100,000 more than coastal homes located one mile from a surf break).

81. Thomas, *supra* note 71 (discussing Jason Scorse's paper that seeks to prove surfing contributes millions of dollars in property tax revenue).

82. *Id.*; *see, e.g.,* Nelsen, *supra* note 56, at 196-98 (discussing denial of project in Trestles based on consideration of surfing resource economic impacts); *Landmark Agreement*, *supra* note 72 (discussing preservation of San Onofre and "world-renowned surf spot at Trestles Beach" resulting from agreement).

B. Coastal Development Laws & Regulations in California

A myriad of federal and state laws govern development in coastal areas. The main agencies involved in decision-making on coastal development are the Army Corps of Engineers, the California Coastal Commission, local or regional Water Boards, and local municipalities. The primary federal laws that address coastal development are the Clean Water Act's fill permitting program and the Coastal Zone Management Act.[83]

The Clean Water Act, signed into law in 1972, imposes a requirement for a developer to obtain a permit prior to filling a wetland or dredging and depositing dredged material in water.[84] Permits are granted by the Army Corps of Engineers, and the applicable regional or local water board must certify that the permit complies with California's water quality plan.[85] Permits cannot be granted to fill a wetland if there are "[s]ignificantly adverse effects of discharge of pollutants on recreational, aesthetic, and economic values."[86] In order to obtain a wetlands fill permit, the developer must provide mitigation in the form of restoring wetlands within the same watershed.[87] If citizens or environmental organizations find that Clean Water Act permitting provisions are improperly administered, they have standing to raise legal challenges.[88]

The federal Coastal Zone Management Act was also signed into law in 1972, and it requires coastal states, including California, to identify coastal uses that degrade water quality and implement plans to control coastal land use and development to promote water quality.[89] California voters established the Coastal Commission through referendum in 1972.[90] The Coastal Commission is governed by the California Coastal Act.[91] To meet the requirements of the federal Coastal Zone Management Act, the Commis-

83. The Clean Water Act's Wetland Fill Permitting Requirements are found at 33 U.S.C. § 1344 (1987). The Coastal Zone Management Act is codified at 16 U.S.C. § 1455b (1992).

84. § 1344(a).

85. *California Water Boards, Water Board Function: Wetlands Protection, and Dredge & Fill Regulation*, https://www.waterboards.ca.gov/board_reference/majorfunctions/dredge_fill.pdf (last visited Feb. 18, 2020).

86. 40 C.F.R. § 230.10(c)(4) (2020).

87. 33 C.F.R. § 332.3(a)(1), (b) (2020).

88. See, e.g., Surfrider Found. v. Cal. Reg'l Water Quality Control Bd., 211 Cal. App. 4th 557, 568 (Cal. Ct. App., 4th Dist. 2012) (alleging proposed mitigation measures were inadequate to minimize impact on sea life).

89. 16 U.S.C.A. § 1455b (2018).

90. *Our Mission*, CALIFORNIA COASTAL COMM'N, https://www.coastal.ca.gov/whoweare.html (last visited Feb. 20, 2020).

91. *Id.*

sion created the California Coastal Management Program, which was approved by the National Oceanic and Atmospheric Administration (NOAA) in 1978.[92] Salient to recreational ocean users such as divers and surfers, the California Coastal Act provides that "[c]oastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses."[93] The Coastal Commission has jurisdiction over development that occurs generally within one thousand yards of the coastline but may extend up to the lesser of "the first major ridgeline" or "five miles" in "significant coastal estuarine, habitat, and recreational areas."[94] The Coastal Commission also has jurisdiction over the state's three mile territorial jurisdiction out to sea.[95] This provides a significant layer of protection for coastal areas because development within the Coastal Zone requires a permit.[96] The California Coastal Act places various priorities on uses of oceanfront land.[97] Recreational facilities have priority over non-coastal dependent uses but not over agriculture or coastal-dependent industry.[98] It also prioritizes aquaculture over non-coastal dependent uses.[99]

92. *Description of California's Coastal Management Program*, CAL. COASTAL COMM'N, https://www.coastal.ca.gov/fedcd/ccmp_description.pdf (last visited Feb. 20, 2020). The California Coastal Act is codified at CAL. PUB. RES. CODE §§ 30000, et. seq. (West 2020).

93. CAL. PUB. RES. CODE § 30220 (West 2020). While the statute gives standing for citizen suits, it appears to have been seldom used. In the one case where Surfrider Foundation sued the Coastal Commission, the dispute was not related to an environmental issue but rather restriction of access to public beaches due to installation of parking meters. Surfrider Found. v. Cal. Coastal Comm'n, 26 Cal. App. 4th 151, 154-55 (Cal. Ct. App., 5th Dist., 1994). This provision could be used more widely for citizens' suits to challenge coastal development and marine uses that interfere with swimming and diving activities. *See* CAL. PUB. RES. CODE § 30801 (West 2020) (permitting citizen suits in cases where plaintiff or representative "appeared at a public hearing" or provided public comments).

94. CAL. PUB. RES. CODE § 30103(a) (West 2020). The Coastal Commission's jurisdiction is greater in rural areas and smaller in more developed areas. For example, in Los Angeles County, the Coastal Commission's jurisdiction is up to the ridgeline of the Santa Monica Mountains in Malibu and within one thousand yards of the coastline in the other cities. In Orange County, the Coastal Commission jurisdiction extends significantly inland to protect wetlands by Huntington Beach and Newport Beach as well as the areas of Newport Coast and Laguna Beach. The Coastal Commission also overlays with federal lands, such as at Camp Pendleton. For maps, *see Maps: Coastal Zone Boundary*, CAL. COASTAL COMM'N, https://www.coastal.ca.gov/maps/czb/ (last visited Feb. 20, 2020). *See also* CAL. PUB. RES. CODE §§ 30150-30174 (West 2020) (codifying adjustments to Coastal Zone boundaries on case-by-cases bases).

95. *Our Mission*, *supra* note 90.

96. CAL. PUB. RES. CODE §§ 30600, et seq. (West 2020).

97. §§ 30221, et seq.

98. § 30222.

99. § 30222.5.

In most cases, local jurisdictions oversee permitting of new development in accordance with Local Coastal Programs, which must be approved by the Coastal Commission.[100] Additionally, if jurisdictions seek to make changes to their Local Coastal Program, Coastal Commission approval is required.[101] The Local Coastal Program is integrated into a city's land use and planning documents, such as zoning maps and development regulations.[102] Although most jurisdictions have Local Coastal Programs, "roughly two-thirds" of them are "out of date" and should be revisited.[103] For most coastal jurisdictions, the Local Coastal Program is how new development is regulated and permitted.

New development is not the sole type of construction governed under the Coastal Act. When the California Department of Transportation seeks to build a new freeway or secondary road in the Coastal Zone, it requires a permit from the Coastal Commission or appropriate municipality under an Local Coastal Program.[104] New road and freeway construction also must take into account impact on water bodies.[105] The public comment process provides concerned citizens, including recreational ocean users, an important tool to be involved in new coastal development or freeway construction that impacts surf breaks or diving locations. For example, surfers were able to successfully have the government consider the sedimentation impact caused by the extension of the 241 Toll Road near San Clemente through lengthy litigation and a resulting settlement.[106]

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100. § 30600.5; *See* CAL. COASTAL COMM'N, *Summary of LCP Program Activity in Fiscal Year 17-18*, 3-11 (2018) (providing dates of program approval for LCPs in California).

101. *See, e.g.*, *Summary of LCP Amendment Request No. 2-10*, CALIFORNIA COASTAL COMMISSION (Oct. 19, 2011), https://documents.coastal.ca.gov/reports/2011/11/W15b-11-2011.pdf (discussing recommendations for Coastal Commission decision on amendments requested by the City of Laguna Beach to its LCP).

102. *See, e.g.*, *General Plan/Local Coastal Program*, CITY OF LAGUNA BEACH, http://www.lagunabeachcity.net/civicax/filebank/blobdload.aspx?BlobID=2685 (last visited Feb. 20, 2020).

103. Jordan Diamond, et. al., *The Past, Present, and Future of California's Coastal Act* 8 (2016), https://www.law.berkeley.edu/wp-content/uploads/2017/08/Coastal-Act-Issue-Brief.pdf.

104. *See* CAL. PUB. RES. CODE § 30600(a) (West 2020) (requiring coastal development permit for anyone wishing to develop in coastal zone); *State Route 133 Improvement Project Initial Study/Environmental Assessment*, CALTRANS 3-29 – 3-35 (2020), *https://ceqanet.opr.ca.gov/2020010158/2/Attachment/GE8Odw*

105. *See, e.g., id.*

106. David Zimmerle, *Another Twist in Trestles Toll Road Saga*, SURFER (Aug. 21, 2017), https://www.surfer.com/features/another-twist-in-trestles-toll-road-saga/; *Landmark Agreement*, *supra* note 72.

C. Federal Facilities

Large federal facilities, such as military bases, have provided varying degrees of protection for recreational uses. In California, there are surfing beaches located at Vandenberg Air Force Base (AFB) (near Point Conception), Naval Base Ventura County (Point Mugu and Point Hueneme) and Camp Pendleton (northern San Diego County).[107] Between these locations, Camp Pendleton's use of the coastal area is the most intensive because the Marine Corps focuses on amphibious operations.[108] While the policy of the Department of Defense (DoD) and military services is that mission always comes first, the services support use of DoD property for recreational activities when it does not conflict.[109] In the case of the Trestles surf spots, the cobblestone bottom makes the location exquisite for surfers but not amenable to training, so the impact of training activities in the location is minimal.[110] Trestles has been prioritized for recreational use since President Richard Nixon brokered a lease with California to operate the coastal area as a state park in 1971.[111] This provides a significant benefit to the

107. Jon R. Anderson, *Best Military Surf Spots: Exclusive Beaches in 5 Hubs*, MILITARY TIMES (Aug. 12, 2015), *https://www.militarytimes.com/off-duty/2015/08/12/best-military-surf-spots-exclusive-beaches-in-5-hubs/*.

108. *See* 1 *Environmental Impact Statement for the Advanced Amphibious Assault Vehicle*, MCB CAMP PENDLETON 4.6-1–4.7-3 (Apr. 2003) (discussing impacts on land use and recreation from amphibious training).

109. *See, e.g.*, *Marine Corps Integrated Natural Resources Management Plan*, MCB CAMP PENDLETON 2-61 (2007), https://www.pendleton.marines.mil/Portals/98/Docs/mission%5B1%5D.pdf (stating recreational access and use is supported when "it does not conflict with mission, security, and safety requirements[ ]").

110. Dashel Pierson, *Could Trestles Close to the Public?*, SURFLINE (Apr. 28, 2017), *https://www.surfline.com/surf-news/the-lease-for-san-onofre-state-beach-from-marine-corps-base-camp-pendleton-ends-in-2021/1276*.

111. *Id.* (discussing that prior to Nixon's arranging for the lease to California, surfers would trespass onto the base and avoid Marine patrols to use the waves); *see* NATIONAL REGISTER OF HISTORIC PLACES REGISTRATION FORM 16-17 (draft), *Cal. Office of Historic Preservation*, http://ohp.parks.ca.gov/pages/1067/files/ca_san%20diego%20county_trestles_nomination.pdf (last visited Feb. 20, 2020); *see also*, Everett Holles, *Embattled Marines Yield a Beach in California to Sunbathers and Surfers*, N.Y. TIMES (Apr. 5, 1971), https://www.nytimes.com/1971/04/05/archives/embattled-marines-yield-a-beach-in-california-to-sunbathers-and.html. As an interesting side note, Pres. Nixon's "Western White House," La Casa Pacifica in San Clemente, overlooked the surf breaks at Trestles, and Pres. Nixon often walked the beach at the spot. Robert Nedelkoff, *Memories of President Nixon's Western White House*, RICHARD NIXON FOUND. (Sept. 7, 2013), https://www.nixonfoundation.org/2013/09/memories-president-nixons-western-white-house/; *see also* David J. Morris, *Surfing in Nixonland*, N.Y. TIMES (Sept. 6, 2016), https://www.nytimes.com/2016/09/06/opinion/surfing-in-nixonland.html?_r=1 (discussing Pres. Nixon's habit of "strolling at the water's edge"). For the stories of the conflicts between surfers and Marines prior to the lease, *see generally*, Steve Pezman, *Capers in the Key of "T"*, 7 SURFER'S J., No. 7, 1998.

economy of the town of San Clemente, which neighbors the surf breaks.[112] While many surf breaks located on federal facilities are not accessible to the public, these installations are vital to preservation of the surfing and diving resources located on their coastlines.[113]

D. Marine Protected Area Network Laws & Regulatory Bodies

Currently, the most comprehensive conservation mechanism for ocean areas are federal and state Marine Protected Areas. Marine Protected Areas are designed to provide protection to "natural and cultural resources."[114] There are various types of Marine Protected Areas that provide varying levels of protection for marine mammals within their boundaries.[115] The authority for Marine Protected Areas lies within the National Marine Sanctuaries Act.[116]

As long as an area meets the five requirements set forth within the Act, the Commerce Secretary can designate the location as a Marine Protected Area.[117] The first requirement is that the Area will fulfill the purposes of the Act, which includes marine conservation and ecosystem management.[118] The second requirement is that the Area is of "special national significance" based on "conservation, recreational, ecological, historical, scientific, cultural, archaeological, educational, or esthetic qualities; the communities of living marine resources it harbors; or its resource or human-use values."[119] The third requirement is that "existing State and Fed-

112. Nelsen, *supra* note 56, at 196-98; Nelsen, et al., *supra* note 8.

113. *See* Anderson, *supra* note 107 (listing "military-only beaches" that make ideal surf spots).

114. *Framework for the National System of Marine Protected Areas of the United States of America*, NOAA 4 (Mar. 2015), *https://nmsmarineprotectedareas.blob.core.windows.net/marineprotectedareas-prod/media/archive/nationalsystem/framework/final-mpa-framework-0315.pdf*.

115. *Id.* (noting Marine Protected Areas provide "an array of levels of protection and conservation purposes, from areas that allow multiple-use activities to areas that restrict take and/or access[ ]").

116. 16 U.S.C.A. §§ 1431, et seq. (2019). Jordan Diamond, et. al., *Marine Spatial Planning in U.S. Waters: An Assessment and Analysis of Existing Legal Mechanisms, Anticipated Barriers, and Future Opportunities*, ENVTL. LAW INST. 4-6 (Dec. 2009), https://www.eli.org/sites/default/files/eli-pubs/d19_13.pdf (hereinafter "Marine Spatial Planning in U.S. Waters"). *See Legal Authorities Relating to the Implementation of Marine Spatial Planning*, NAT'L OCEAN COUNCIL 19-20, https://tethys.pnnl.gov/sites/default/files/publications/Legal_Authorities_Relating_to_CMSP.pdf (last visited Feb. 20, 2020) (discussing National Marine Sanctuaries Act and role of Secretary of Commerce in conservation of certain marine environment).

117. 16 U.S.C.A. § 1433(a)(1)-(5) (2019); 16 U.S.C.A. § 1434 (2019).

118. § 1433(a)(1) (2019). The purposes of the Act are set forth in 16 U.S.C.A. § 1431(b) (2019).

119. § 1433(a)(2)(A)-(C).

eral authorities are inadequate or should be supplemented to ensure coordinated and comprehensive conservation and management."[120] The fourth requirement is that National Marine Sanctuary designation must "facilitate the objectives" of comprehensive conservation and management, scientific research, and public education.[121] Finally, the "size and nature" of the Area must "permit comprehensive and coordinated conservation and management."[122]

In 2000, President Bill Clinton used an executive order to create a network of Marine Protected Areas in areas of federal jurisdiction and within the Exclusive Economic Zone while using the statutory framework for marine protection.[123] The executive order also established a Marine Protected Area Center within NOAA to serve as a coordination element for the Marine Protected Area network.[124] Although recreational uses are a permissible reason to designate a Marine Protected Area, the current network has focused on ecological conservation.[125]

Federal Marine Protected Areas are integrated into a combined system with state Marine Protected Areas.[126] Federal Marine Protected Areas in California encompass four National Marine Sanctuaries, six National Parks (of various types), and five National Wildlife Refuges.[127] California has a system of Marine Protected Areas within its state territorial waters that offer varying levels of protection for marine life.[128] The types of state-level Marine Protected Areas are State Marine Reserves, State Marine Conservation Areas, and Special Closures.[129] State Marine Reserves prohibit all com-

120. § 1433(a)(3).

121. § 1433(a)(4).

122. § 1433(a)(5).

123. Exec. Order No. 13158, 65 Fed. Reg. 34909, 34909 (2000).

124. *Id.* at 34910-11.

125. *Framework for the National System of Marine Protected Areas of the United States of America*, *supra* note 114, at 12-13 (describing national system is intended to "effectively protect the nation's natural and cultural marine heritage and living marine resources for current and future generations").

126. *Id.* at 5.

127. *The List of National System Marine Protected Areas*, MARINE PROTECTED ARAS (July 2013), https://nmsmarineprotectedareas.blob.core.windows.net/marineprotectedareas-prod/media/archive/pdf/national-system/nationalsystem_siteslist_0713.pdf.

128. California's system of Marine Protected Areas is implemented by the Marine Life Protection Act, codified at CAL. FISH & G. CODE §§ 2850-2863 (West 2020), and regulations are contained in 14 C.C.R. § 632 (2018).

129. *Southern California Marine Protected Areas*, CAL. DEP'T OF FISH AND WILDLIFE (Jan. 1, 2019), https://wildlife.ca.gov/Conservation/Marine/MPAs/Network/Southern-California (providing Southern California waters contain fifty

mercial and recreational takings of marine resources.[130] State Marine Conservation Areas have varying levels of use limitations ranging up to "no-take" zones, and Special Closures restrict boating or access adjacent to "sea bird rookeries or marine mammal haul-out sites."[131] California's Marine Life Protection Act, which governs the Marine Protected Areas within California territorial waters, provides that Marine Protected Areas should enhance "recreational opportunities."[132] Marine Protected Areas serve an important function to provide protection of resources, and diving is popular in areas where they exist.[133] By comparison, while a few surfing areas are located within Marine Protected Areas, most surfing areas are not.[134]

E. Surfing Reserves and Historical Preservation

While the California Coastal Commission and Marine Protected Areas provide governmental regulation to promote conservation of the marine environment, there are private mechanisms being created to also ensure that recreational users are stakeholders in coastal and ocean development processes and use. The World Surfing Reserve program is at the forefront of these private initiatives.[135] Malibu was designated as a World Surfing Reserve in

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Marine Protected Areas providing varying levels of protection over fifteen percent of California's state jurisdiction out to three miles at sea). For a visual depiction of the relationship between federal and state Marine Protected Areas in Southern California waters, see *California South Coast Marine Protected Areas*, CAL. DEP'T OF FISH AND WILDLIFE (Oct. 1, 2014), https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=105397&inline.

130. *Id.* (noting State Marine Reserve is a "[Marine Protected Area] designation that prohibits damage or take of all marine resources (living, geologic, or cultural) including recreational and commercial take[ ]").

131. *Id.* (providing for two types of State Marine Conservation Areas, some of which have varying restrictions that "may allow some recreational and/or commercial take of marine resources" while others may be no-take areas that allow "potentially affected and ongoing permitted activities such as dredging and maintenance to continue").

132. *See generally* CAL. FISH & G. CODE §§ 2851-2853 (West 2020).

133. *Compare Southern California Marine Protected Areas*, *supra* note 129, *with Snorkeling Santa Barbara*, *supra* note 24 *and Dive Sites – Southern California*, *supra* note 35. Many prime diving spots, boasting healthy rocky-reef kelp forest ecosystems, are also within state or federal Marine Protected Areas. *Id.*

134. *Compare Southern California Marine Protected Areas*, *supra* note 129, *with California Surf Reports & Cams*, SURFLINE, https://www.surfline.com/surf-reports-forecasts-cams/united-states/california/5332921 (last visited Feb. 20, 2020) (showing location of surf spots in California on interactive map).

135. *See About World Surfing Reserves*, SAVE THE WAVES COAL., https://www.savethewaves.org/programs/world-surfing-reserves/about/ (last visited Feb. 20, 2020) (describing mission of organization as "preserving wave breaks and their surrounding areas" for value they present).

2010.[136] The community of Santa Cruz, California, which hosts twenty-three surf breaks, followed suit by becoming a World Surfing Reserve in 2012.[137] World Surfing Reserve status is a designation by a private organization in concert with a local community.[138] The World Surfing Reserve designation creates no legal protections, but it likely does become a factor when a government is contemplating projects that would impact the surfing reserve.[139] Because the designation represents the values of voters in the community, it is assumed that the municipal government would take the designation into account with decision-making.[140]

Historical preservation is another avenue that has been used to protect surfing resources. Historical preservation is assured through listing a location on the National Register of Historic Places (National Register).[141] When a location is listed on the National Register, any proposed federal agency action, including permitting actions, requires the agency to obtain an opinion from the Advisory Council on Historic Preservation and integrate that opinion into making a decision.[142] Despite this requirement, "decisions rest with the agency implementing the undertaking."[143] In 2018, the Malibu surf break was successfully added to the National Register of Historic Places.[144]

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136. *See* Ben Marcus, *The Last Best Place*, MALIBU: WORLD SURFING RESERVE (2010) (discussing protecting Malibu with help of World Surfing Reserve); *Malibu*, SAVE THE WAVES COAL., https://www.savethewaves.org/programs/world-surfing-reserves/reserves/malibu/ (last visited Feb. 21, 2020).

137. *Santa Cruz*, SAVE THE WAVES COAL., https://www.savethewaves.org/programs/world-surfing-reserves/reserves/santa-cruz/ (last visited Feb. 21, 2020).

138. *See* Drew Kampion, *Saving the World, One Wave at a Time*, MALIBU: WORLD SURFING RESERVE (2010) (discussing World Surfing Reserve working at "local, national, and global levels").

139. *See id.* (describing World Surfing Reserve "bubble" of protection from unchecked development and other operations); *see also* Marcus, *supra* note 136 (suggesting World Surfing Reserve is influential in protecting surfing areas); s*ee also* Blum, *supra* note 57, at 36-38 (discussing how World Surfing Reserve protects "iconic surf breaks"); *see also* Ball, *supra* note 14, at 396-98 (stressing importance of World Surfing Reserve despite its lacking legal authority).

140. Kampion, *supra* note 138 (asserting designation is a "tactical wedge that inserts itself into every future discussion concerning the destiny of the reserve area[ ]"); Marcus, *supra* note 136 (relating that "[o]nce a site has been selected and prioritized, the [World Surfing Reserve] board helps locals form a council to draft a management plan that will enable them to act as ongoing stewards of the reserve[ ]").

141. *See* 54 U.S.C.A. § 302102(a) (2020) (providing for listing of property that meets statutory criteria on National Register of Historic Places).

142. 36 C.F.R. § 60.2(a) (2020).

143. *Id.*

144. *See* 83 Fed. Reg. 2667-02 (Jan. 18, 2018) (soliciting comments on proposed listing of beach area from Malibu Pier to Malibu Colony); *Malibu Historic*

Listing a surfing resource on the National Register can be difficult. Few surf breaks would qualify for the rigid criteria.[145] Even of the ones that could qualify, there could be other obstacles, such as the need for the DoD to certify the listing of resources on military bases.[146] For example, the Trestles surfing break failed to achieve registration on the National Register despite federal nomination.[147] Although the Trestles surfing break met the criteria for historic preservation, the Department of the Navy, who owns the land, refused to certify the application.[148] The Department of the Navy did not want to place the historic preservation protections on the land because of the potential for conflict with the training needs of Camp Pendleton.[149] Historic preservation provides an extra layer of protection based on the requirement for agencies to seek an advisory opinion for impact to historically protected surfing breaks, but this is not a realistic measure of protection for most breaks.

III. DISCUSSION

There are numerous measures in place that provide a modicum of protection for surfing and diving resources, ranging from federal and state laws governing development impacts, the Marine Protected Area network, recognition as a Surfing Reserve, and historic preservation. These measures, however, are insufficient to adequately protect surfing and diving resources from degradation. Surfing and diving resources face impacts from coastal development and competing or nearby ocean uses, such as impaired water

District, NAT'L PARK SERV., https://www.nps.gov/places/malibu-historic-district.htm (last visited Feb. 21, 2020).

145. *See* Ball, *supra* note 14, at 402 (describing criteria needed for listing). Listing criteria that would be relevant for surfing breaks requires "quality of significance in American history . . . and culture" to be "present in districts, sites . . . that possess integrity of location, . . . setting, . . . feeling, and (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or (b) that are associated with the lives of persons significant in our past . . . ." 36 C.F.R. § 60.4 (2020). Additionally, properties generally must have "achieved significance" at least fifty years prior to listing on the National Register. § 60.4(d). *See also*, *National Register of Historic Places Registration Form 7*, CAL. OFFICE OF HISTORIC PRES., http://ohp.parks.ca.gov/pages/1067/files/ca_san%20diego%20county_trestles_nomination.pdf (last visited Feb. 21, 2020) (providing justification for Trestles to be listed on National Register of Historic Places despite having achieved significance within last fifty years).

146. 54 U.S.C.A. § 302102 (2018); *see, e.g.,* Blum, *supra* note 57, at 35-36 (discussing refusal of Department of Navy to certify Trestles designation).

147. *See id.* (discussing failure of nomination for Trestles because of failure of Dep't of Navy to certify nomination).

148. *Id.*

149. *See id.* n. 32 (explaining federal agencies can reject if military training can be impacted as it is central to national security).

quality, risks of oil spills, overharvesting of sea life, and changes in sediment flows. Proper application of Coastal and Marine Spatial Planning mitigates these risks by prioritizing recreational uses of the ocean over non-complementary uses, modifying current uses to ensure compatibility with recreational uses, requiring new projects at sea or ashore to undergo assessment of their impacts on recreational resources, denying projects that adversely impact these resources, and removing obsolete ocean development to restore previously lost resources.

A. The Premise of Coastal & Marine Spatial Planning

Coastal and Marine Spatial Planning applies concepts of zoning that are used to regulate land use to the use of the ocean.[150] Marine Spatial Planning is a two-part process that consists first of information-gathering and second of developing an ocean zoning scheme.[151] The information-gathering stage studies ecological and economic impacts from existing ocean uses, suitability of different areas of the ocean for particular uses, and the conflicts generated from these uses.[152] The zoning component is designed to allocate permitted uses "based on a determination of an area's suitability for those uses" and reduce conflicts "by separating incompatible activities."[153] Marine Spatial Planning accomplishes this goal through dividing the portion of the ocean to be regulated into zones and assigning particular regulations that apply to those zones.[154] The Coastal component of Coastal and Marine Spatial Planning involves studying and regulating of onshore activities in the coastal zone that impact the oceans.[155]

Coastal and Marine Spatial Planning is dynamic and thus adaptable to changing conditions, such as seasonal rotation of uses or whale migration patterns.[156] Coastal and Marine Spatial Planning follows a cyclical approach, meaning once a plan is developed, it is then reviewed and can later be revised as new information be-

150. TUNDI AGARDY, OCEAN ZONING: MAKING MARINE MANAGEMENT MORE EFFECTIVE 7 (2010).

151. BOEHNERT, *supra* note 2, at 66-67.

152. *Id.* at 66. Boehnert describes in greater detail inquiries that comprise "a detailed characterization of the area in question" necessary for ocean zoning. *Id.*

153. AGARDY, *supra* note 150, at 7-8.

154. *Id.* at 8 (describing implementation of Marine Spatial Planning).

155. BOEHNERT, *supra* note 2, at 141 (explaining that spatial planning extends to onshore activities that impact marine ecosystems).

156. AGARDY, *supra* note 150, at 32; Olga Koubrak, presentation to Oceans Law Conference, Washington, D.C., Nov. 10, 2018.

comes available.[157] Marine Spatial Planning is a process that considers stakeholder interests and designates specific uses for particular areas of the ocean, while continuously evaluating these uses based on data.[158] Planners can also import parts of successful initiatives in other areas of the world and modify them, as necessary, to fit the needs of the planning area.[159] For instance, another planning team in a different country may develop a solution to a similar problem that planners in California are facing.[160] Additionally, Coastal and Marine Spatial Planning can take into account new and constantly evolving technologies that can provide more effective protections for recreational sites and ocean ecology.[161] Software tools can assist planners to develop ocean zoning schemes by running scenarios of proposed schemes to model impacts.[162]

B. Protecting Resources through Coastal & Marine Spatial Planning

The current regimen of Marine Protected Areas is insufficient to protect recreational ocean resources. Many Marine Protected Areas do not protect ecosystems and resources outside the limits of the area. About forty percent of US waters are managed through a Marine Protected Area, "and most of these are multiple-use areas that provide little protection to fragile marine ecosystems."[163] Marine Protected Areas create a patchwork of protection but can result in congestion of other areas outside of no-take reserves, leading to greater conflict between uses.[164] As a result, resources outside of the protected area could face degradation because of in-

157. *Id.*

158. *Id.* at 45-46.

159. *See* Ball, *supra* note 14, at 387-88 (discussing how initiatives in Australia and Peru can form basis of approach for planners to protect surfing resources in California).

160. *See* AGARDY, *supra* note 150, at 32.

161. Laylan Connally, *San Clemente Surfer Cleans up Beach to Preserve His Town,* ORANGE CTY. REGISTER (Mar. 7, 2017), https://www.ocregister.com/2017/03/07/san-clemente-surfer-cleans-up-beach-to-preserve-his-town/. One example of technology that can be implemented at coastal locations through permitting requirements would be a "smart" trash can, designed to reduce plastics and other trash from entering the ocean from wind or birds. *Id.*

162. *See* AGARDY, *supra* note 150, at 46-47; About MARXAN, MARXAN CONSERVATION SOL., http://marxan.org/about.html (last visited Jan. 27, 2018) (discussing how free software like MARXAN allows conservation planners to model conservation zoning schemes).

163. Tundi Agardy, et. al., *Mind the Gap: Addressing the Shortcomings of Marine Protected Areas through Large-Scale Marine Spatial Planning*, 35 MARINE POLICY 226 (2011).

164. *Id.*

creased use and overharvesting based on the closure of the Marine Protected Area.[165] Conversely, Marine Spatial Planning can provide ecosystem protection both inside and outside of Marine Protected Areas. For example, during whale migration season, Marine Spatial Planning can close or open certain shipping lanes and overlay regulations over marine traffic in migration areas to protect whales from ship strikes.[166]

One of the other problems with some Marine Protected Areas is that they protect areas "facing little threat," meaning that there was no overuse of the resources there to begin with.[167] In those cases, the perception of overall resource protection is greater than the reality.[168] In California, most of the Marine Protected Areas are designed to provide protections to marine life around the Channel Islands and not the nearshore environment off the mainland coast.[169] Thus, even with the progress that California and the federal government have made in an integrated Marine Protected Area network, there is still no comprehensive scheme for preservation of the marine environment.[170]

Coastal and Marine Spatial Planning would provide beneficial effects that extend beyond recreational resources. Planning efforts would also provide predictability and sustainability for commercial fishing, promote conservation of wildlife and ocean environments, and reduce the negative impacts from resource extraction.

1. Recreational Water-Contact Uses

The current networks of Marine Protected Areas have benefited divers, less so surfers, because they have preserved certain coastal ecosystem areas but do not address problems associated with changing sand flows at surfing locations.[171] To the extent that Marine Protected Areas have benefited surfers, it has been because the Marine Protected Area protects a reef environment that serves

165. *Id.* at 227 (discussing how zoning of large National Monument in Northwest Hawaiian Islands resulted in large no-take reserve, but could better accomplish objectives if there were no-take areas to protect coral ecosystems and nonsensitive areas designated as "sustainable fishing zones").

166. Koubrak, *supra* note 156.

167. AGARDY, *supra* note 163, at 230.

168. *Id.*

169. *California South Coast Marine Protected Areas*, *supra* note 128.

170. AGARDY, *supra* note 163, at 230.

171. Ball, *supra* note 14, at 390 (discussing Tres Palmas Marine Reserve in Rincón, P.R.). In Southern California, there are only a few locations where no-take Marine Protected Areas overlap with surfing locations, most notably in La Jolla, Laguna Beach, Point Dume (up the coast from Malibu), and Point Conception, up the coast from Santa Barbara (El Capitan and Vandenberg AFB spots). *Id.*

as the "feature directly responsible for the formation" of a wave.[172] This protection of recreational resources is more so a case-specific side effect of Marine Protected Areas, rather than an overarching primary purpose. There are other outside factors, both onshore and offshore, that need to be controlled through comprehensive planning in order to protect recreational resources. For example, integrated coastal zone management is needed to protect surfing breaks from impacts generated by onshore development.[173]

While most surfing or diving activities occur in a nearshore environment within state territorial waters, this is not exclusively the case. For example, Cortes Bank, which is over 100 miles out to sea from San Diego, is a unique location for both swimming and diving.[174] Cortes Bank is an underwater seamount that hosts a vibrant ecosystem of both kelp forest and hydrocoral, and the bathymetry of the location produces some of the largest waves in the world.[175]

The shortcoming of surfing reserves and other similar designations is "that they become 'paper parks'—areas with legislative protection but no plans for management or implementation. As a result they afford no actual resource protection, leaving the reefs still vulnerable to impacts from over-harvesting, recreational uses, and tourism."[176]

Historic preservation is a better avenue because it provides statutory protections against development that would harm the break. However, the extreme difficulties in qualifying a surfing break for listing, coupled with impediments imposed by other agencies such as DoD to listing breaks located on their property, make historic preservation insufficient to protect surf breaks.[177]

A more robust path, such as Coastal and Marine Spatial Planning, is required to achieve a lasting impact to preserve ocean rec-

172. *Id.* at 390; *Compare Cal. Dep't of Fish and Wildlife, supra* note 129 *with* California Surf Reports & Cams, *supra* note 134.

173. B.E. Scarfe, et al., *Sustainable Management of Surfing Breaks – An Overview*, 1 REEF J. 44 (2009).

174. Offshore Diving, TRUTH AQUATICS, https://truthaquatics.net/destinations/offshore/ (last visited Nov. 4, 2018); Gary Robbins, Don't Oooh that 64-foot Wave in Southern Ocean. San Diego's Cortes Bank Produces Bigger Bombs, SAN DIEGO UNION TRIBUNE (May 22, 2017), http://www.sandiegouniontribune.com/news/science/sd-me-cortes-bank-20170522-story.html (describing Cortes Bank as desirable destination for recreational aquatic activities).

175. *Id.* (noting in 2008, surfer Mike Parson set Guiness World Record for largest wave ever ridden to date at 75 feet).

176. Chad Nelsen and Leon Richter, *Salva Tres Palmas: A Community-Driven Effort to Protect Coastal and Marine Resources in Rincón, Puerto Rico*, 20TH INT'L CONFERENCE OF THE COSTAL SOC'Y 276-77 (2005).

177. *See* Blum, *supra* note 57, at 26-35.

reational sites and balance other conflicting uses. Spatial Planning would allow planners to study areas that are utilized for recreational water-contact uses and study the primary threats those areas face, both internally and externally. From there, the planners can develop regulations to preserve those areas while balancing the interests of competing ocean and coastal uses.

2. Commercial Fishing and Aquaculture

Marine Spatial Planning can make commercial fishing and aquaculture more efficient by providing two approaches that planners can use to increase efficient fishing while sustainably preserving the stocks of wild fish within fisheries.[178] First, Marine Spatial Planning provides for designating specific aquaculture areas where commercial fishing operations can farm fish, shellfish, and kelp.[179] Planners take into account the economic value of the aquaculture area, the impacts generated by the aquaculture, and competing uses. Planners can also set a maximum limit on aquaculture to limit other environmental impacts.[180] Second, Marine Spatial Planning also involves measures such as rotating commercial fishing to different areas of a fishery throughout the year to prevent overharvesting of wild-caught fish.[181] Another option is closing off spawning areas from fishing during spawning season to encourage fish population growth.[182] The practices of aquaculture and rotating commercial fishing can also provide other benefits, such as reducing the amount of energy spent in transporting fish from overseas markets.[183] Marine Spatial Planning would allow planners to also consider where ocean recreational sites are located when designating areas for commercial fishing. While there is not likely to be conflict between commercial fishing and surfing locations, there is the potential that planners may need to deconflict uses when a commercial fishery contains a shallow reef area that is popular for diving. Marine Spatial Planning allows planners to consider

178. S.E. Lester, et al., *Marine Spatial Planning Makes Room for Offshore Aquaculture in Crowded Coastal Waters*, 9 NATURE COMMC'NS 945, Fig. 2 (2018), https://www.nature.com/articles/s41467-018-03249-1.pdf.

179. *Id.* at *7.

180. *Id.*

181. F. Douvere, et al., *The Role of Marine Spatial Planning in Sea Use Management: The Belgian Case*, 31 MARINE POL'Y 182, 186 (2008).

182. *Id.*

183. *See* AGARDY, et al., *supra* note 163, at 227.

the value of these competing uses and better preserve the recreational resources while promoting the value of the fishery.[184]

3. Oil & Energy Development

Offshore energy development creates an issue that needs to be clearly resolved through Marine Spatial Planning to overcome conflicting uses.[185] Offshore oil production and transportation creates potential conflicts with recreational use, commercial fishing, and conservation, especially in the event of pollution from an oil spill.[186] For offshore wind power in particular, Marine Spatial Planning provides an effective way to allocate ocean space to wind power by analyzing which areas have high wind production while at the same time minimizing the disturbance to other ocean uses.[187] These offshore wind turbines can have a navigational safety impact because they create blind spots in vessel radar systems known as the "radar shadow."[188] In terms of recreational resources, wind power farms can have negative effects on surfing breaks because they are known to affect wave height and coastal sediment flow, which in turn affects wave shape.[189] Wind power farms also disrupt the natural ecosystem where they are sited, causing detriments to the native fauna and flora.[190] A Marine Spatial Planning system would analyze the sediment and wave impacts to make a siting decision that would

184. *See* Lester, *supra* note 178, at *3, *7 (discussing how Marine Spatial Planning makes better use of value of fisheries and conflict from environmental stakeholders than conventional fishery management practices, concluding that Marine Spatial Planning "could greatly improve aquaculture without significant negative consequences for existing uses or the environment").

185. Michael Burger, *Consistency Conflicts and Federalism Choice: Marine Spatial Planning Beyond the States' Territorial Sea*, 41 ENVTL L. REP. NEWS & ANALYSIS 10602 (July 2011) (highlighting problems created by offshore wind generation and blurring of 3-nm line).

186. For a more detailed discussion, see *infra* notes 19-44 and accompanying text.

187. Crow White, Benjamin S. Halpern, & Carrie V. Kappel, *Ecosystem Service Tradeoff Analysis Reveals the Value of Marine Spatial Planning for Multiple Ocean Uses*, PNAS EARLY ED. 2 (Feb. 2, 2012), https://www.pnas.org/content/pnas/early/2012/02/27/1114215109.full.pdf.

188. *See* Vince Savage, *Assessment of the Impact of the Proposed Block Island Wind Farm on Vessel Radar Systems*, ORSTED 37-8 (2015), http://dwwind.com/wp-content/uploads/2016/02/2015-8-25_BIWF_Qinetiq_marine-vessel-radar-report.pdf (discussing potential navigational problem of radar shadow created by offshore wind turbine siting).

189. *See* 650 R.I.C.R. § 20-05-8.4.2.C (2019) (discussing considerations for siting offshore wind power production under Rhode Island's Special Area Management Plan).

190. *See* 650 R.I.C.R. § 20-05-8.4.3 (2019) (discussing impacts on ecology from offshore wind power production).

protect recreational resources as well as ecology and navigational safety.

4. Onshore Coastal Development

While Marine Protected Areas regulate activities within their boundaries, they do not provide regulation over activities outside of the Marine Protected Area that could adversely impact the Marine Protected Area, such as external coastal development or ocean uses.[191] An effective Coastal and Marine Spatial Planning program would explicitly require permitting of onshore development to factor in the impact that the proposed development presents for ocean recreational sites.[192] A Coastal and Marine Spatial Planning program could do this through designating an area to be a certain distance from water features such as rivers that flow into the ocean near recreational resources that would be regulated.[193]

A current example of a program that regulates both uses of water and adjoining land is the Wild and Scenic Rivers Program.[194] Under the Wild and Scenic Rivers Act, once a river is designated, the Army Corps of Engineers may regulate both the use of the river as well as "the related adjacent land."[195] However, the Act only requires permitting for projects "within the bed and bank" of the river.[196] For other areas of adjacent land, there are voluntary measures that landowners are encouraged to implement, such as maintaining native vegetation to reduce erosion, using extreme caution for pesticide applications, and ensuring proper function of any septic system.[197]

It is more difficult to regulate land that has pre-existing uses than it is to regulate land use subsequent to implementation of the

191. *See* 15 C.F.R. § 922.43 (2018) (providing that regulations for each Marine Protected Area contains a list of activities prohibited within the Marine Protected Area). *See, e.g.*, 15 C.F.R. § 922.62 (2018) (stating a list of activities within the Channel Islands Marine Protected Area that are prohibited unless permit is acquired to include diving).

192. *Cf.* California Coastal Act § 30220 *with* 33 U.S.C.A. § 1344 (2018).

193. BOEHNERT, *supra* note 2, at 141.

194. The Wild and Scenic Rivers Act is codified at 16 U.S.C.A. §§ 1271 et seq. (2019). For further information on the Program, *see* NAT'L WILD AND SCENIC RIVERS SYS., http://www.rivers.gov (last visited Mar. 26, 2019).

195. 16 U.S.C.A. § 1273 (2019).

196. 16 U.S.C.A. § 1278 (2019); *see Wild & Scenic Rivers: Guide for Riverfront Property Owners*, NAT'L WILD AND SCENIC RIVERS SYS. 2 (2005), https://www.rivers.gov/documents/landowners.pdf.

197. *Wild & Scenic Rivers: Guide for Riverfront Property Owners*, *supra* note 194, at 11-13.

Coastal and Marine Spatial Planning program.[198] However, Coastal and Marine Spatial Planning can still encourage landowners to implement friendly practices on land that has already been built.[199] Doing so could involve a state authority providing financial incentives, such as a tax deduction or exemption, for voluntary measures such as restoring wetlands. Of course, integrated Coastal and Marine Spatial Planning may also require communities to use taxpayer money to exercise eminent domain to condemn property that would otherwise create impacts on the marine environment if developed.[200]

The Wild and Scenic Rivers Program provides another example of a starting point that can be used for the regulation of coastal development. Coastal and Marine Spatial Planning allows planners to consider the immense value that recreational ocean sites provide to coastal communities.[201] Coastal and Marine Spatial Planning provides tools that planners can use for vetting proposed projects, preventing devastating oil spills, and promoting water quality within surfing and diving recreational areas. This involves restricting incompatible uses in those areas as well as enacting measures to better control adverse impacts of urban runoff. Coastal and Marine Spatial Planning also gives planners an avenue to promote other important goals, such as public health, by prioritizing recreational uses such as surfing and diving.[202]

198. Christopher Serkin, *Existing Uses and the Limits of Land Use Regulations*, 84 N.Y.U. L. Rev. 5 (2009).

199. *Wild & Scenic Rivers: Guide for Riverfront Property Owners*, *supra* note 194, at 11-13; Isabel Mascareñas, *Venice City Council Member Proposes Year Round Ban on Fertilizers to Help Prevent Red Tide*, 10 NEWS (Sept. 5, 2018), https://www.wtsp.com/article/news/red-tide/venice-city-council-member-proposes-year-round-ban-on-fertilizers-to-help-prevent-red-tide/67-591258324 (discussing proposed measure to place sensors on pipes to reduce fertilizer runoff).

200. *See, e.g.*, Bryce Alderton, *City Buys Hillside Property in Laguna Canyon Behind Sawdust Festival*, LA TIMES (Aug. 2, 2017), https://www.latimes.com/socal/daily-pilot/news/tn-dpt-me-lb-land-purchase-20170802-story.html (describing instance wherein eminent domain used to prevent detriment to wildlife habitat).

201. *See* Thomas, *supra* note 71 (discussing value recreational ocean sites provide). *See also* White, Halpern, & Kappel, *supra* note 187, at 2 (analyzing how Marine Spatial Planning compares values of competing uses, such as wind energy and fisheries, to reconcile conflicts between uses and designate areas for each use that present greatest value to that use, thus promoting overall value that ocean provides to uses in totality).

202. Eleni Papathanasopoulou, et. al., *Valuing the Health Benefits of Physical Activities in the Marine Environment and Their Importance for Marine Spatial Planning*, 63 MARINE POL'Y 144 (Jan. 2016).

C. Current Law Provides Authority for Coastal and Marine Spatial Planning but Could be Improved

A patchwork of federal laws and the California Coastal Act provide adequate legal framework to implement Coastal and Marine Spatial Planning in the Southern California coastal environment.[203] At the federal level, there are several statutes that provide federal agencies the authority to regulate the various parts that form a Marine Spatial Plan.[204] However, absent an overarching statutory scheme, there are shortcomings in that Marine Spatial Planning would have to be implemented on a segmented basis, with different portions of the planning effort developed by different agencies.[205] There are also current authority gaps for some areas, such as aquaculture.[206]

One of the headliner statutes for Coastal and Marine Spatial Planning is the National Marine Sanctuaries Act.[207] This Act provides authority for the Department of Commerce to designate Marine Protected Areas.[208] While the implementation of this statute has focused on designating areas based on conservation value, authority exists to designate areas based on their recreational value as well.[209] Given that recreational value is a standard for designating an area, this statute would provide authority in itself to designate areas such as important surfing breaks as protected based on their recreational value.[210] However, in Southern California, most surfing locations are within the state territorial waters, so a California-centered approach would be needed.[211]

On a grander scale than the National Historic Preservation Act, the Antiquities Act can serve a role in Coastal and Marine Spatial Planning because it authorizes designation of National Monu-

203. *See* BOEHNERT, *supra* note 2, at 114-16 (describing schema of federal and state laws providing for implementation of spatial planning).

204. Diamond, *supra* note 116, at vii-viii. *See also*, *Legal Authorities Relating to the Implementation of Marine Spatial Planning*, *supra* note 116, at 1-2 (discussing various federal statues that grant government authority to regulate).

205. *Id.* at 1.

206. *Id.* at 35.

207. 16 U.S.C.A. §§ 1431 et seq. (2019).

208. 16 U.S.C.A. § 1434 (2019). *See also*, Diamond, *supra* note 116, at 4-6; *Legal Authorities Relating to the Implementation of Marine Spatial Planning*, *supra* note 116, at 19-20.

209. *Framework*, *supra* note 114, at 12-13; 16 U.S.C.A. § 1433(a)(2) (2019).

210. 16 U.S.C.A. § 1433(a)(2) (2019) (allowing for areas to be protected based on "recreational" value).

211. *California Surf Reports and Cams*, SURFLINE, https://www.surfline.com/surf-reports-forecasts-cams/united-states/california/5332921 (last visited Feb. 1, 2019) (depicting surfing locations and their geographical locations).

ments.[212] National Monuments are areas that contain "historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest" in federally-controlled land or waters.[213] While National Monuments are limited to the minimum size necessary to protect the historical or scientific artifacts they contain, the National Monument can be quite large, as in the case of the Papāhanaumokuākea Marine National Monument in Hawaii.[214] From a practical standpoint, establishing National Monuments is more difficult than a Marine Protected Area because it is a Presidential action.[215] The Antiquities Act also has a limited application for preservation of surfing areas because it only applies to federally-controlled areas.[216]

While the National Marine Sanctuaries Act and the Antiquities Act could be leveraged for recreational resources, the Endangered Species Act and Marine Mammal Protection Act can be used specifically to protect critical habitats for threatened and endangered species and marine mammals, respectively.[217] These Acts each build in significant protection for wildlife that can be incorporated into Coastal & Marine Spatial Planning.[218] Additionally, these protections can be incorporated regardless of whether the critical habitat is within state or federal jurisdiction.[219] However, these Acts do not in themselves provide as broad authority as do the National Marine Sanctuaries Act or Antiquities Act. Their usefulness for Coastal and

212. 54 U.S.C.A. § 320301 (2019).

213. 54 U.S.C.A. § 320301(a).

214. 54 U.S.C.A. § 320301(b) (describing that "limits of the parcels shall be confined to the smallest area compatible with the proper care and management of the objects to be protected."). *See Legal Authorities Relating to the Implementation of Marine Spatial Planning*, *supra* note 116, at 20 (discussing legal authority for establishing National Monuments in ocean and large size of some of National Marine Monuments).

215. *Compare* 16 U.S.C.A. § 1434 (2019) (specifying Secretary of Commerce as authority to designate areas of national significance) *with* 54 U.S.C.A. § 320301 (specifying President as sole authority to designate National Monuments).

216. Diamond, *supra* note 116, at 7. *But see*, *California Coastal National Monument*, BUREAU OF LAND MGMT., https://www.blm.gov/programs/national-conservation-lands/california/california-coastal (last visited Feb. 1, 2019) (providing California Coastal National Monument protects "20,000 rocks, islands, exposed reefs, and pinnacles along the California coastline").

217. 16 U.S.C.A. § 1533(a)(3)(A) (2019) (providing for designation of Critical Habitat under Endangered Species Act); 16 U.S.C.A. § 1382(e) (2019) (providing for development of conservation measures to alleviate impacts on marine mammal "rookeries, mating grounds, or areas of similar ecological significance"). *See also*, Diamond, *supra* note 116, at 7-9.

218. Diamond, *supra* note 116, at 7-9 (discussing how spatial planning can be authorized through other statutes to protect wildlife).

219. *Id.*

Marine Spatial Planning is attributed to the fact that they are complementary in allowing specific protections to be implemented within the framework of an overall plan.[220]

There are several statutes that provide the federal government authority over fisheries' management and aquaculture. For example, within fisheries management, the major statute is the Magnuson-Stevens Act.[221] The Magnuson-Stevens Act created regional Fishery Management Councils for fishery management purposes.[222] These councils have authority to implement plans that include time and area restrictions for fisheries.[223] The National Marine Fisheries Service, part of NOAA, serves as a coordinating and rulemaking agency.[224] This statute is important for Marine Spatial Planning because it already provides plenary authority and experience with fishery management that could be incorporated within broader planning efforts.[225] In terms of Aquaculture, the National Aquaculture Act directed the Department of Commerce, Department of Agriculture, and Department of Interior to engage in research and develop planning for aquaculture to increase fishing sustainability.[226] The plans and research developed by these agencies are useful to inform the fishery plans developed by the regional Fishery Management Councils.[227] However, the statute does have shortcomings. First, it gives authority to several different agencies instead of one central action agency, such as NOAA.[228] Second, environmental and commercial fishing organizations have challenged the abilities of the National Marine Fisheries Service and regional councils to implement aquaculture permitting.[229] Un-

220. *Id.*

221. 16 U.S.C.A. §§ 1801, et. seq. (2019).

222. 16 U.S.C.A. § 1852 (2019); Diamond, *supra* note 116, at 7-9 (describing Magnuson-Stevens Act intent in creating Fishery Management Councils).

223. 16 U.S.C.A. § 1853(b)(2)(A) (2019) (providing fishery management plans "may designate zones where, and periods when, fishing shall be limited, or shall not be permitted, or shall be permitted only by specified types of fishing vessels or with specified types and quantities of fishing gear"); *Legal Authorities Relating to the Implementation of Marine Spatial Planning*, *supra* note 116, at 17.

224. 16 U.S.C.A. § 1852 (2019); *Laws & Policies*, NOAA FISHERIES, https://www.fisheries.noaa.gov/topic/laws-policies (last visited Feb. 2, 2019).

225. Diamond, *supra* note 116, at 7-9 (explaining that statute grants government authority that could be expanded).

226. 16 U.S.C.A. §§ 2801, et seq. (2019); *Legal Authorities Relating to the Implementation of Marine Spatial Planning*, *supra* note 116, at 6.

227. 16 U.S.C.A. § 2803 (2019); *Legal Authorities Relating to the Implementation of Marine Spatial Planning, supra* note 116, at 6.

228. Diamond, *supra* note 116, at 35.

229. *See* Gulf Restoration Network, Inc. v. Nat'l Marine Fisheries Serv., 730 F.Supp.2d 157, 172-73 (D.D.C. 2010) (holding environmental organization plain-

til the legal status of aquaculture is settled or Congress issues clear statutory guidance, the ability to implement aquaculture within a Coastal and Marine Spatial Planning scheme in federal waters is limited.[230]

An overarching statute that provides important Coastal and Marine Spatial Planning authority is the National Environmental Policy Act. This statute requires review and public comment for federal actions (such as permitting decisions) that lead to significant environmental impact.[231] This Act provides relevant authority to Coastal and Marine Spatial Planning because the process ensures that "[f]ederal agencies consider environmental impacts" on the uses designated within Coastal and Marine Spatial Plans.[232] For instance, if an offshore oil structure is proposed, then the permitting process would have to consider the impact on nearby marine reserves or recreational uses. Additionally, this Act can make planning more efficient when activities with similar impacts in the same area are considered together, such as designating an area for shipping, fishing, or marine research.[233]

Despite the ample statutory authority to implement aspects of Coastal and Marine Spatial Planning, a shortcoming of the current federal statutory scheme is that each statute is very sector-specific.[234] Successful Coastal and Marine Spatial Planning efforts at the federal level would require at least twenty different federal agencies to work together.[235] Of course, the Ocean Policy Committee (which replaced the National Ocean Policy Task Force) would be able to serve in the role of a coordinating body to implement

tiffs lacked standing to challenge proposed aquaculture permitting scheme because there was not yet a final regulation promulgated); Gulf Fisherman's Ass'n. v. Nat'l Marine Fisheries Serv., 341 F.Supp.3d 632, 637-42 (E.D. La. 2018) (holding aquaculture permitting scheme exceeded NMFS's authority to regulate fisheries); Kahea v. Nat'l Marine Fisheries Serv., 2012 WL 1537742 at *7-11 (D. Haw. 2012) (*aff'd in part*, 544 Fed. App'x 675 (9th Cir. 2013)) (holding issuance of one-year aquaculture special permit was within statutory authority of NMFS). The *Gulf Fisherman's Association* court distinguished *Kahea* on the basis that Kahea did not involve agency rulemaking. *Gulf Fisherman's Ass'n*, 341 F.Supp. at 641.

230. Diamond, *supra* note 116, at 36. The *Gulf Fisherman's Association* case was appealed in January 2019 and is awaiting review by the Fifth Circuit Court of Appeals. Gulf Fisherman's Ass'n v. Nat'l Marine Fisheries Serv., No. 19-30006 (5th Cir. Jan. 3, 2019).

231. 42 U.S.C.A. § 4332 (2019). *See also Legal Authorities Relating to the Implementation of Marine Spatial Planning*, *supra* note 116, at 2-3.

232. *Legal Authorities Relating to the Implementation of Marine Spatial Planning*, *supra* note 116, at 3.

233. *Id.*

234. *Id.* at 1 (explaining applicable statutes are limited in scope).

235. *See* BOEHNERT, *supra* note 2, at 114 (explaining necessity for multiple governmental agencies to collaborate if spatial planning is to be developed further).

Coastal and Marine Spatial Planning among the agencies that are empowered with pieces of Marine Spatial Planning, such as NOAA or the regional Fishery Management Councils.[236] Another shortcoming includes gaps in statutory authority, as is the case for aquaculture.[237] Implementing Marine Spatial Planning through rulemaking may also have to contend with litigation from industry and environmental groups.[238] In most cases, however, Marine Spatial Planning efforts should withstand court scrutiny under the *Chevron* doctrine.[239] Still, a more comprehensive federal Marine Spatial Planning statutory system would resolve these shortcomings, though this is unlikely to develop in the near term.

At the state level, there is much greater latitude to implement Coastal and Marine Spatial Planning under the auspices of the state's police powers.[240] The state holds title to and responsibility for tidal waters under the Public Trust Doctrine.[241] The Submerged Lands Act provides for state jurisdiction over ocean waters and resources out to three miles from the shoreline.[242] Within California, the California Coastal Act and the federal Coastal Zone Management Act work together to provide authority for Coastal and Marine Spatial Planning at the state level.[243] The California Coastal Act governs a large amount of the aspects of Coastal and Marine Spatial Planning. For instance, it contains comprehensive provisions relating to coastal development.[244] It also provides requirements for permitting of oil and gas development.[245] The Marine Life Protection Act governs conversation areas for sea life as

236. *Cf.* Exec. Order No. 13840, 83 Fed. Reg. 29431 (June 22, 2018) *with* Exec. Order No. 13547, 75 Fed. Reg. 43023 (July 22, 2010).

237. Diamond, *supra* note 116, at 35.

238. *Eg.*, *Gulf Restoration Network*, 730 F. Supp. at 157; *Gulf Fisherman's Ass'n*, 341 F.Supp.3d at 632.

239. *See Gulf Fisherman's Ass'n*, 341 F.Supp.3d at 636 (holding Marine Spatial Planning efforts largely arise under statutory ambiguity, allowing courts to interpret statutory authority).

240. U.S. CONST. amend. X (codifying that "The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people[ ]").

241. *See* BOEHNERT, *supra* note 2, at 12-13.

242. 43 U.S.C.A. § 1301 (2019) (setting three-mile from shoreline boundary); 43 U.S.C.A. § 1311 (2019) (providing that states have ownership of waters within their boundaries and right to manage resources therein).

243. Cal. Pub. Res. Code §§ 30200 et seq. (2019); Blue Earth Consultants LLC, *Coastal and Marine Spatial Planning Background Document*, OCEAN PROT. COUNCIL 36-39, 43-45 (Jul. 12, 2011).

244. Cal. Pub. Res. Code § 30600 (2019).

245. Cal. Pub. Res. Code § 30262 (2019).

well as fishing regulations.[246] In terms of permitting of individual projects or designation of areas, the California Environmental Quality Act serves as the state-level equivalent to the National Environmental Policy Act, requiring the assessment of environmental impacts.[247]

California also created the Ocean Protection Council as a coordinating and information-sharing body among agencies relevant to Coastal and Marine Spatial Planning efforts.[248] The Ocean Protection Council also oversees California's Marine Protected Area system.[249] One of the mandates of the Ocean Protection Act is to establish the Ocean Protection Council as the coordinating body for scientific data for agencies to implement Marine Spatial Planning.[250] Unfortunately, California's current system also shares the shortcoming with the federal system in that ocean planning is conducted in a very fragmented manner involving a myriad of different state agencies.[251] Greater information sharing among agencies and improving the coordination role of the Ocean Protection Council in promulgating Marine Spatial Planning initiatives can mitigate this shortcoming.[252] Additionally, the Coastal Commission needs to be tied in to the Ocean Protection Council in order to be able to provide comprehensive Coastal and Marine Spatial Planning.[253] Adding enforcement authorities for violations of Coastal and Marine Spatial Planning would also be necessary to ensure compliance.[254] One of the criticisms of the current setup in California is that state agencies "generally are consistently unable to integrate analyses of impacts to marine areas originating from inland regions."[255]

Since state jurisdiction only extends to three nautical miles from the coastline, integration with the federal government is necessary to ensure comprehensive Marine Spatial Planning.[256] Given the current position of the federal government to expand leases for offshore oil drilling on the outer continental shelf, however, the

246. *Id.* § 2860.
247. Cal. Pub. Res. Code § 21003 (2019).
248. *Id.* § 35615.
249. Cal. Fish & G. Code § 2850.5 (2019).
250. Cal. Pub. Res. Code § 35620 (2019).
251. Blue Earth Consultants LLC, *supra* note 243, at 13.
252. *Id.* at 15.
253. *See id.* at 43 (contrasting roles of Coastal Commission with those of Ocean Protection Council).
254. See R.I. GEN. LAWS ANN. §§ 46-23-7 (West 2019).
255. Blue Earth Consultants LLC, *supra* note 243, at 14.
256. *Framework*, *supra* note 114, at 3-4.

state of California and the federal government do not have the same priorities.[257] This conflict can be resolved through one of the important provisions of the Coastal Zone Management Act known as the Federal Consistency Program.[258] This program prohibits permits for activity in federal waters that have an impact on the state coastal zone from being issued without certification that the permit is consistent with the state's coastal program.[259] The implication is that if the state of California has Marine Spatial Planning statutes and regulations that provide for specific uses of areas, the federal government cannot grant a permit, such as for oil extraction, that would impact the state's Marine Spatial Planning system.[260] This can include environmental impact as well, such as pollution that would be generated near a designated conservation area.[261]

While a more comprehensive overhaul of the myriad of statutes would be beneficial, especially to address planning gaps, efforts to statutorily create a comprehensive national ocean policy have not overcome opposition in Congress.[262] During the Obama Administration, there was interest in promoting a national ocean policy through executive order.[263] The Obama Administration succeeded in creating the National Ocean Policy Task Force to conduct extensive research and to "participate in the process for

257. *See* Paul Rogers, *Jerry Brown Signs New Law to Block Trump's California Offshore Oil Drilling Plans*, THE MERCURY NEWS (Sept. 8, 2018), https://www.mercurynews.com/2018/09/08/jerry-brown-signs-new-laws-to-block-trumps-california-offshore-oil-drilling-plans/ (explaining that Governor Jerry Brown signed bills to block President Trump's offshore drilling plans); *see also*, Kyle Ferrar, *The Feds Trump California's State Ban on Offshore Oil Drilling*, FRACTRACKER ALLIANCE (Nov. 5, 2018), https://www.fractracker.org/2018/11/california-offshore-drilling/.

258. BOEHNERT, *supra* note 2, at 40 (describing how Federal Consistency Program can alleviate discrepancies between state and federal government).

259. 16 U.S.C.A. § 1456 (c)(3)(A) (2019). "After final approval by the Secretary [of Commerce] of a state's management program, any applicant for a required Federal license or permit to conduct an activity, in or outside of the coastal zone, affecting any land or water use or natural resource of the coastal zone of that state shall provide in the application to the licensing or permitting agency a certification that the proposed activity complies with the enforceable policies of the state's approved program and that such activity will be conducted in a manner consistent with the program." *Id.* The applicant provides the certification to the responsible state agency, and if the state agency objects, then only the Secretary of Commerce can approve the permit, after finding that the permit is consistent with the objectives of the Coastal Zone Management Act or necessary for national security reasons. *Id.*

260. BOEHNERT, *supra* note 2, at 42-43 (explaining how state statutory schema can prevent federal government from acting detrimentally to protected spaces).

261. *Id.* at 41.

262. *Id.* at 103-04.

263. Exec. Order No. 13547, 75 Fed. Reg. 43023 (July 22, 2010).

Coastal and Marine Spatial Planning."[264] Despite the work performed during the Obama Administration, given the current political environment, comprehensive Coastal and Marine Spatial Planning policy implementation or legislation is unlikely to occur in the near future at the federal level. Even if the federal government fails to advance Coastal and Marine Spatial Planning, however, states still have ample authority to implement their own schemes in the coastal environment and state territorial waters to impact federal actions within federal jurisdiction waters.[265]

D. Coastal & Marine Spatial Planning Case Studies

Coastal and Marine Spatial Planning for Southern California's waters need not be developed in a vacuum. Several other nations and U.S. states have already successfully pioneered coastal and marine spatial planning on various levels.[266] Australia and New Zealand have directly implemented marine spatial planning to protect recreational resources. Rhode Island provides an American example of a comprehensive ocean plan with a coastal development regulation component. Other U.S. states are also in the process of developing marine spatial plans of various extents.[267] This provides many lessons and features that California and the federal government can draw from to produce comprehensive plans that protect recreational resources.

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264. *Id.*

265. 16 U.S.C.A. § 1456 (c)(3)(A) (2019).

266. *See, e.g.*, AGARDY, *supra* note 150, at 61-63 (discussing Australia's efforts); Blum, *supra* note 57, at 28 (discussing New Zealand's efforts); BOEHNERT, *supra* note 2, at 133 (discussing Rhode Island's efforts); BOEHNERT, *supra* note 2, at 200 (discussing Massachusetts' efforts).

267. *See* Exec. Order No. 13840, 83 Fed. Reg. 29431 (June 22, 2018) (revoking Exec. Order No. 13547 and replacing Obama-era Task Force with an Ocean Policy Committee focused on economic development and sustainable use); *see also* BOEHNERT, *supra* note 2, at 116-17; Diamond, *supra* note 116, at vi. *See e.g.*, H. Amend. 1321, Cong. Rec. H4797 (Jul. 12, 2016). The amendment, which passed in the House, purported to prohibit use of appropriations to the Department of Interior to implement National Ocean Policy. The sponsor of the amendment, who was concerned about President Obama's Executive Order, which created the National Ocean Policy Task Force, requiring "that various bureaucracies work together to 'zone the ocean' . . . largely affecting the ways in which we utilize our ocean resources" stated, "[w]e don't need the Federal Government to tell us what to do . . . . The policy not only restricts ocean and inland activities, but it redirects Federal money away from congressionally directed priorities for over 20 Federal agencies that meet as part of the National Ocean Council, tasked with implementing the National Ocean Policy—a council that has no statutory authority to exist and no congressional appropriation." *Id.*; Ferrar, *supra* note 257; Rogers, *supra* note 257.

1. Surfing Recreational Reserve and Marine National Parks (Australia)

Coastal and Marine Spatial Planning can be used to give governmental recognition and protection to set aside areas specifically for the purpose of surfing or diving, as is done for other marine purposes such as fishing, shipping, or energy. In Australia, this has been accomplished by placing surfing locations into the Crown Lands system, which is similar to lands administered by the Department of the Interior in the United States.[268] Australia was one of the early adopters of Marine Spatial Planning within the Great Barrier Reef Marine Park, as the coral reefs are a popular diving location.[269] Australia's Marine Spatial Planning programs create specific protection for ocean recreational resources.

The Great Barrier Reef Marine Park is home to its namesake the Great Barrier Reef, which is one of the most significant diving and snorkeling locations in the world due to its prevalence of coral and sea life and its sheer massive size.[270] The Great Barrier Reef Marine Park was created in 1975, and the park was set up with zoning for particular uses within the park, such as no-take areas or designated fishing areas.[271] The various zones were designed to avoid conflicts between competing uses.[272] Of course, Marine Spatial Planning is a dynamic concept; once zones are designated for particular uses, they may be adjusted or rezoned as required.[273] In 2004, the Great Barrier Reef Marine Park was rezoned to adjust its uses to better align with changing circumstances of use and the need for further preservation.[274] The rezoning substantially increased the amount of no-take areas, while providing specific areas for marine shipping and commercial fishing to use.[275] Planners solicited public comment and took the responses into account

268. *See* Blum, *supra* note 57, at 25.

269. AGARDY, *supra* note 150, at 60.

270. *Id.* at 61 (detailing that Great Barrier Reef Marine Park "covers the largest single collection of coral reefs and associated habitats in the world"); *Scuba Diving*, GREATBARRIERREEF.ORG, http://www.greatbarrierreef.org/reef-experiences/diving-the-reef/ (last visited Jan. 26, 2019).

271. AGARDY, *supra* note 150, at 61-62.

272. *Id.* at 61 (describing that "[t]he primary objective the [Great Barrier Reef Marine Park] initially aimed to achieve through its multiple use zoning plan was to accommodate anticipated growth in coastal and marine tourism while at the same time avoiding conflicts with other economic sectors").

273. *Id.* at 45-46.

274. *Id.* at 63.

275. *Id.* at 63, 69. The zoning scheme for the Great Barrier Reef Marine Park is located at *Maps*, GREAT BARRIER REEF MARINE PARK AUTH., http://www.gbrmpa.gov.au/access-and-use/zoning/zoning-maps (last visited Jan. 27, 2019).

when devising the new zoning for the park.[276] At the same time, planners relied on scientific data to promote wildlife and coral reef conservation.[277] Additionally, planners used software technology to determine which zoning scheme would best achieve the goals of environmental preservation and recreational opportunities while allowing for economic development.[278] More recently, recognizing a significant uptick in tourism by "super-yachts," the Great Barrier Reef Marine Park Authority enacted new regulations upon these larger vessels to reduce their impact on the environment and on other users.[279] This park provides a prime example of successful Marine Spatial Planning to protect recreational resources for diving and snorkeling uses.

Bells Beach in New South Wales, Australia is a successful case study of Coastal and Marine Spatial Planning at a surfing location.[280] Bells Beach was relatively undeveloped when it was designated as a Surfing Recreational Reserve in 1971.[281] Since being placed into the Reserve status, over 118 acres of land near the site has been protected from development.[282] On the Marine Spatial Planning side, the breaks themselves are also protected as part of a

276. AGARDY, *supra* note 150, at 64 (noting that planners received 31,000 public comment responses, which were used to formulate new zoning scheme).

277. *Id.* at 64-65.

278. *Id.* (discussing use of software program MARXAN to model zoning scenarios to help in decision-making process); *see also Rezoning the Reef & Pacific Island Conservation*, CONSERVATION SOLS., http://marxan.org/case-studies/reef-rezoning.html (last visited Jan. 27, 2019).

279. *Recreation on the Great Barrier Reef*, GREAT BARRIER REEF MARINE PARK AUTH., http://www.gbrmpa.gov.au/our-work/Managing-multiple-uses/recreation-in-the-great-barrier-reef-marine-park (last visited Jan. 27, 2019) (noting that "use of super-yachts" (which are vessels longer than 24 meters) "for recreation is becoming increasingly popular"). Super-yacht permitting requirements differ based on the length of the vessel and the purpose of the trip to the Great Barrier Reef (commercial tourism or a private vessel). *Cf. A Statement of Arrangements in the Great Barrier Reef Marine Park for Super-Yacht Operations*, GREAT BARRIER REEF MARINE PARK AUTH. 3-4 (2011) *with Superyacht Guide to the Whitsundays*, GREAT BARRIER REEF MARINE PARK AUTH. 15-16 (2018). The Whitsunday regulations are an example of where Marine Spatial Planning authorities adapted to changing circumstances and more intensive use in a particular area. *See* AGARDY, *supra* note 150, at 45-46.

280. *See* Ball, *supra* note 14, at 387. *But see* Blum, *supra* note 57, at 26 n. 26 (noting that Reserve area at Bells Beach is adjacent uplands and not breaks themselves). *See generally*, *Bells Beach Surfing Recreational Reserve*, SURF COAST SHIRE, https://www.surfcoast.vic.gov.au/Experience/Parks-and-reserves-listing/Bells-Beach-Surfing-Recreational-Reserve (last visited Jan. 19, 2019).

281. Ball, *supra* note 14, at 386-87. For an example of Bells Beach as it existed in the 1960s, see Brown, *supra* note 10.

282. *Bells Beach Surfing Recreation Reserve Coastal Mgmt. Plan* 2015, SURF COAST SHIRE 25 (2015).

large Marine National Park that was established in 2002.[283] The park management permits uses within the park boundaries to preserve recreational uses such as diving and surfing.[284] Additionally, the park management prohibits conflicting uses such as oil exploration.[285] As a result, the site remains a world-class surfing break.[286] The approach taken by Australia can serve as a model for how to protect ocean recreational sites at less-developed areas in California (or areas that are part of federal facilities), such as Trestles or the surf breaks near Point Conception.[287]

2. Surf Breaks of National Significance (New Zealand)

New Zealand has had a more difficult path to implementing Marine Spatial Planning than Australia.[288] However, New Zealand's surf break protection program provides a successful case study of Coastal and Marine Spatial Planning to protect ocean recreational resources. New Zealand's approach gives an example of how to both designate surf breaks and ensure that development in the uplands is consistent with protection of the surfing resources.[289] New Zealand published a Coastal Policy Statement to establish protection for features of the coastal environment. The Coastal Policy Statement protects seventeen "surf breaks of national significance" through "ensuring that activities in the coastal environment do not adversely affect the surf breaks," and "avoiding adverse effects of

283. *See Point Addis Marine Nat'l Park*, PARKS VICTORIA (2014), https://www.parks.vic.gov.au/places-to-see/sites/point-addis-beach-west (providing map of Point Addis Marine National Park, showing Bells Beach). *See also* PARKS VICTORIA, *Point Addis Marine Nat'l Park - Point Danger Marine Sanctuary - Eagle Rock Marine Sanctuary: Mgmt. Plan* 1 (2005), https://parkweb.vic.gov.au/__data/assets/pdf_file/0019/313426/Point-Addis-Marine-National-Park-Management-Plan.pdf (hereinafter "Point Addis Marine National Park Management Plan").

284. *Point Addis Marine National Park Management Plan*, *supra* note 283, at 10-11, 30-31, 32-34 (providing management methods to ensure that condition of reefs does not suffer from over-exploration by underwater diving and recognizing that surfing presents little environmental impact).

285. *Id.* at 10-11, 36 (providing that activities such as fishing or oil exploration are strictly prohibited within park but military exercises are permitted as long as they meet other park requirements).

286. Ball, *supra* note 14, at 386.

287. *Id.*

288. *See* AGARDY, *supra* note 150, at 81 (discussing comparing resistance from commercial fishing interests and aboriginal groups to large-scale conservation planning). *But see id.* at 78 (predicting that commercial fishing interests in New Zealand may begin to support more comprehensive Marine Spatial Planning on basis of reducing conflict with other uses).

289. Blum, *supra* note 57, at 28.

other activities on . . . use and enjoyment of the surf breaks."[290] The New Zealand policy statement recognizes that both ocean uses and coastal development can negatively impact recreational resources.[291]

From a Marine Spatial Planning perspective, New Zealand's approach provides a balancing of the economic benefits and harms of resource extraction against "the need to maintain and enhance the public open space and recreational qualities and values of the coastal marine area."[292] From a coastal development perspective, the New Zealand policy statement requires that "development will not result in a significant increase in sedimentation in coastal marine area, or other coastal water."[293] The impact of the policy statement is that it incorporates Coastal and Marine Spatial Planning and prioritizes protection of recreational resources. The result of the New Zealand policy has been that around 250 surf breaks receive statutory protections.[294]

3. Special Area Management Plan (Rhode Island)

While Rhode Island may be the smallest United States state, Rhode Island's Special Area Management Plan is a successful example of Coastal and Marine Spatial Planning under the framework of the Coastal Zone Management Act.[295] The Rhode Island Special Area Management Plan's coastal development management com-

290. New Zealand Coastal Policy Statement 2010, Policy 16: Surf Breaks of National Significance, *available at* https://www.doc.govt.nz/about-us/science-publications/conservation-publications/marine-and-coastal/new-zealand-coastal-policy-statement/new-zealand-coastal-policy-statement-2010/policy-16-surf-breaks-of-national-significance/#8.

291. New Zealand Coastal Policy Statement 2010, Policy 6: Activities in the Coastal Environment, *available at* https://www.doc.govt.nz/about-us/science-publicavtions/conservation-publications/marine-and-coastal/new-zealand-coastal-policy-statement/new-zealand-coastal-policy-statement-2010/policy-6-activities-in-the-coastal-environment/.

292. *Compare id.* at § 1.a *with id.* at § 2.b. The New Zealand policy also provides for a dynamic approach, including "requiring the removal of any abandoned or redundant structure that has no heritage, amenity, or reuse value." *Id.* at § 2.e.ii. If this criteria from the New Zealand policy were applied to the Long Beach breakwater, a strong case would be made for removing the structure for having outlasted its usefulness. Of course, some residents would make a counter-argument that the structure protects oceanfront property. *See* Wisckol, *supra* note 50.

293. New Zealand Coastal Policy Statement 2010, Policy 22: Sedimentation, available at https://www.doc.govt.nz/about-us/science-publications/conservation-publications/marine-and-coastal/new-zealand-coastal-policy-statement/new-zealand-coastal-policy-statement-2010/policy-22-sedimentation/.

294. Shane Orchard, *Lessons for the Design of Surf Resource Protection – The Australasian Experience*, 148 OCEAN & COASTAL MGMT. 104 (Nov. 2017).

295. BOEHNERT, *supra* note 2, at 133.

ponent states that any activity within "200 feet from the inland edge of coastal features," including banks of tidal rivers, falls under the jurisdiction of the Coastal Resources Management Council.[296] The Costal Resources Management Council has plenary authority for both planning and enforcement within the state territorial waters and coastal uplands.[297] Enforcement authorities include administrative orders, administrative penalties, and criminal penalties.[298]

One shortcoming, however, is that while the Rhode Island plan specifically provides protection for "offshore dive sites" as Areas of Particular Concern, it does not provide any protection for surfing breaks.[299] While this may be due to the fact that Rhode Island is not traditionally thought of as a surfing state, it does boast a handful of surf breaks.[300] Thus, designating Rhode Island's surfing breaks at the same level of protection that diving sites receive would be imperative to protecting those sites from harmful interference from other marine or coastal development activities. Aside from this point, Rhode Island's blueprint provides a useful model that could be adapted and tailored to Coastal and Marine Spatial Planning in Southern California.

4. Other Planning Efforts by U.S. States

Rhode Island has not been alone among the States in developing Coastal and Marine Spatial Planning. Massachusetts was also one of the early adopters of Marine Spatial Planning.[301] The 2010 Massachusetts Ocean Plan did not provide as much "depth or complexity" as Rhode Island's Special Area Management Plan.[302] The Massachusetts Ocean Plan was explicitly required by the Massachusetts Ocean Act, and the Commonwealth Secretary of Energy and Environmental Affairs is designated with the responsibility.[303] One

296. *Id.* at 141.

297. R.I. ANN. GEN. LAWS § 46-23-6 (2019) (enumerating powers of Coastal Resources Management Council for planning and management).

298. R.I. GEN. LAWS § 46-23-7 (2019). Criminal penalties include up to a five hundred dollar fine and three months imprisonment for each day per violation. *Id.*

299. *Id.* at 196.

300. *See Rhode Island Regional Forecast*, SURFLINE, https://www.surfline.com/surf-reports-forecasts-cams-map/@41.41338061238166,-71.42709732055665,12z (last visited Jan. 27, 2019).

301. BOEHNERT, *supra* note 2, at 200.

302. *Id.* at 202. The Massachusetts Ocean Plan primarily focuses on siting for renewable energy projects. *See 2015 Massachusetts Ocean Management Plan* 2-11–16, COMMW. OF MASS. - EXEC. OFFICE OF ENERGY & ENVTL. AFFAIRS (2015).

303. MASS. GEN. LAWS ANN. ch. 21A § 4C (West 2019).

aspect that Massachusetts does well is that the Ocean Act requires re-evaluation of the Massachusetts Ocean Plan every five years.[304]

The state of Washington has also developed a Marine Spatial Planning concept.[305] This was implemented through a statute that required the Department of Ecology to develop a plan.[306] Washington has incorporated stakeholder groups into the planning process.[307] Washington's plan identifies important conservation areas and then conducts comprehensive spatial analysis for proposed uses in other areas.[308] Several other states, such as Hawai'i, have ocean planning policies that set forth priorities and provide for conservation areas but stop short of Marine Spatial Planning.[309] Most coastal states are also members of larger regional planning bodies.[310]

E. Framework for Implementing Coastal & Marine Spatial Planning in California

Planners need to appropriately follow the framework and principles of Coastal and Marine Spatial Planning as it applies to recreational ocean uses in order for the measures to provide sufficient protection. The planners will have to ensure that they follow the requirements of the law to prioritize recreational ocean uses and preservation of recreational sites.[311] Additionally, stakeholder groups such as the Surfrider Foundation will have to continue to actively contribute to the planning process and ensure that plan-

304. *Id.*

305. *See* State Ocean Caucus, *About Us*, Washington Marine Spatial Planning, http://www.msp.wa.gov/learn/about/ (last visited Feb. 11, 2019); *see also* WASH. REV. CODE ANN. § 43.372.030 (West 2019).

306. *Id.*

307. *See, e.g.*, *Marine Spatial Plan for Washington's Pacific Coast* 2-133, DEP'T OF ECOLOGY (REV. 2018), *available at* http://msp.wa.gov/wp-content/uploads/2018/06/WA_final_MSP.pdf (incorporating data provided by recreational stakeholder groups Surfrider Foundation and Point 97 to determine important recreational areas for protection); *Draft Summary 1*, WASH. COAST MARINE ADVISORY COUNCIL (June 13, 2018), *available at* https://www.ezview.wa.gov/Portals/_1962/Documents/WCMAC/6.13.18_WCMAC%20Meeting%20Summary_Final.pdf (showing stakeholder groups, such as Surfrider Foundation, who are involved in planning meetings).

308. *Id.* at 4-22–27.

309. *See, e.g.*, *Hawaii Ocean Resources Mgmt. Plan*, HAWAII STATE OFFICE OF PLANNING 68-73 (2013), *available at* http://files.hawaii.gov/dbedt/op/czm/ormp/ormp_update_reports/final_ormp_2013.pdf.

310. *NOAA Coastal and Marine Spatial Planning*, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, https://cmsp.noaa.gov/activities/index.html (last visited Feb. 14, 2019).

311. *See* CAL. PUB. RES. CODE § 30220 (West 2018) (mandating protection of ocean for activities that cannot be replicated inland).

ners follow the requirements of the law.[312] Furthermore, the planning processes for Marine Spatial Planning and development planning within coastal watersheds will have to be integrated to ensure a uniform approach to preservation of ocean recreational resources.[313]

Involvement of stakeholder organizations in Coastal and Marine Spatial Planning differs from public comment procedures utilized under the California Environmental Quality Act.[314] Typical comment procedure involvement is responsive to an individual project or proposal.[315] With Coastal and Marine Spatial Planning, stakeholders are supposed to be involved from the outset with the overall planning process, cutting across multiple sectors.[316] This engagement is far more active than the one that currently exists.[317] Planners should work with stakeholders, such as Surfrider Foundation, to identify and prioritize areas that are important to recreational users.[318] These stakeholders are integral to this process to represent the interests of recreational users.[319] Additionally, if planners stray from the legal requirements, these stakeholder groups can serve an important role of filing citizen suits to enforce compliance.[320]

Coastal and Marine Spatial Planning requires a deep understanding of the area to be zoned and the threats to that area. The science used in planning should encompass an understanding of aspects of the environment that face threats, such as the bathymetry and sediment flows of a particular surf break.[321] Compiling scien-

312. *See Ocean Protection*, SURFRIDER FOUND., https://www.surfrider.org/initiatives/ocean-protection (last visited Jan. 31, 2020) (discussing Surfrider Foundation's role in Regional Ocean Planning process).

313. *See* BLUE EARTH CONSULTANTS LLC, *supra* note 243, at 14-15 (emphasizing need for integration of policy decision-making and goals in marine spatial planning).

314. *See* CAL. PUB. RES. CODE § 21091 (West 2020) (describing public comment procedures); CAL. PUB. RES. CODE § 21003 (West 2018) (describing policy goals of public document examination procedures).

315. *See* BLUE EARTH CONSULTANTS LLC, *supra* note 243, at 20 (stating CMSP process differs from traditional notice-and-comment procedure by providing public with larger array of policy factors).

316. *See id.* at 20-21 (praising stakeholder participation in planning process).

317. *See id.* at 20 (extolling benefits of CMSP process engagement).

318. *Ocean Protection*, *supra* note 312.

319. *See id.* (describing Foundation's role and goals in preservation of ocean and coastal areas).

320. *See, e.g.*, Surfrider Foundation v. Cal. Reg'l Water Quality Bd., 149 Cal. Rptr. 3d 763 (Cal. Ct. App. 2012) (challenging Regional Water Quality Control Board's approval of local NPDES permit).

321. *See* AGARDY, OCEAN ZONING, *supra* note 150, at 45-46 (listing steps undertaken in ocean zoning process).

tific data about the ocean has been one of the strengths of the Ocean Protection Council.[322] For instance, California comprehensively mapped its territorial waters.[323] From a recreational standpoint, this data revealed important bathymetric features to surfing breaks such as the Mavericks surfing break near Half Moon Bay, CA, which is known for its large waves.[324]

Planners also must take into account other areas and uses, both at sea and on land, that affect the areas to be zoned.[325] From there, planners should identify complementary uses of various areas and intensity of uses permissible in those areas. The process of engaging stakeholders and considering cumulative impacts are both areas where California needs to improve in order to develop an effective Coastal and Marine Spatial Planning system.[326] Once planners determine the permissible uses and intensity of those uses, the planners should then issue regulations that govern those uses, enforcement mechanisms to assure compliance, and incentives to promote voluntary compliance.[327] Coastal and Marine Spatial Planning is a dynamic process, so planners should be consistently revisiting plans to ensure that they are current.[328]

Coastal and Marine Spatial Planning recognizes that there are competing uses of the ocean that can have a detrimental impact on

322. *See* BLUE EARTH CONSULTANTS LLC, *supra* note 243, at 16 (discussing progress California has made in creating comprehensive data profiles to aid decision-making).

323. Betsy Mason, *New Maps Reveal California's Sensational Seafloor Geography*, WIRED (May 22, 2015), https://www.wired.com/2015/05/new-california-seafloor-maps/ (reporting on results of California Seafloor Mapping Program); Sean Greene, *Scientists Explore 2,000 Miles of the Ocean Floor – And You Can Too*, LA TIMES (Mar. 20, 2015), https://www.latimes.com/science/sciencenow/la-sci-sn-explore-ocean-floor-usgs-20150319-story.html (discussing interactive component of Seafloor Mapping Program).

324. Memorandum, Progress on Implementing Issue 1, Task 1 from the OPC Strategic Plan 2-3, CALIFORNIA OCEAN PROT. COUNCIL (Aug. 27, 2014), *h*ttp://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20140827/Item6_OPC_Aug2014_Seafloor_and_Coastal_Mapping.pdf.

325. *See, e.g.*, 650 R.I. GEN. LAWS § 20-05-11.10.1 (2019) (discussing considerations in citing of offshore wind energy sites as it relates to impacts within coastal area). *See also* BLUE EARTH CONSULTANTS LLC, *supra* note 243, at 14 (arguing California lacks mechanisms to integrate primary and secondary effects on and off coast in decision-making process).

326. *See* BLUE EARTH CONSULTANTS LLC, *supra* note 243, at 14 (stating current stakeholder engagement opportunities are limited and difficult and should be expanded).

327. *See* AGARDY, OCEAN ZONING, *supra* note 150, at 45-46.

328. *See id.*

ecology and recreational sites.[329] Coastal and Marine Spatial Planning, as well as the pre-existing statutory authorities, provide a framework that California's Ocean Protection Council can use to prioritize ocean recreational uses to protect these sites for users.[330] Coastal and Marine Spatial Planning can also mitigate the detrimental impact of pollution and changed sediment flows that coastal development presents to ocean recreational sites.

California is blessed with already having much of the scientific data needed to successfully implement Coastal and Marine Spatial Planning.[331] Much of what is needed to move forward is organizational structure and regulatory implementation. For example, there will need to be integration of the Ocean Protection Council and the Coastal Commission in order to ensure comprehensive planning efforts can occur.[332] Successful programs from Rhode Island, as well as recreational protections emphasized in Australia and New Zealand, provide abundant examples for planners to follow.[333] As long as planners follow Coastal and Marine Spatial Planning principles and the mandates of the law to protect recreational sites, Coastal and Marine Spatial Planning will provide a far more effective regime to protect ocean recreational uses than what is currently available.

In addition to using a framework for Coastal and Marine Spatial Planning to prioritize recreational ocean uses over competing ocean uses and prevent detrimental impacts from coastal development, there are specific proposals that planners could incorporate into Coastal and Marine Spatial Planning that would protect and restore ocean recreational sites. From a coastal development standpoint, these proposals involve minimizing impacts to water and wave quality from current and additional development in the

329. *Marine Spatial Planning*, https://marineplanning.org/ (last visited Feb. 16, 2020) (discussing need for planning to balance competing interests and usages of marine environments).

330. *See* CAL. PUB. RES. CODE §§ 30220-30224 (West 2018) (providing measures to ensure conservation of recreational water activities).

331. *See* BLUE EARTH CONSULTANTS LLC, *supra* note 243, at 16 (discussing progress California has made in creating comprehensive data profiles to aid decision-making).

332. *Compare* CAL. PUB. RES. CODE §§ 30300-30305 (West 2018) (discussing creation and powers of the Coastal Commission), *with* CAL. PUB. RES. CODE § 35615 (West 2018) (describing powers and duties of the Ocean Protection Council).

333. *See, e.g.*, 23 R.I. GEN. LAWS ANN. §§ 46-23-2.1-46-23-6 (West 2018) (describing membership and powers of the Coastal Resources Management Council). *See* AGARDY, OCEAN ZONING, *supra* note 150, at 8 (describing international ocean zoning efforts).

coastal watersheds. From a Marine Spatial Planning perspective, these proposals involve managing and restricting incompatible ocean uses as well as restoring resources previously lost because of ocean development that is now obsolete.

First, as part of the permitting process, new projects in the coastal zone or within a coastal watershed should be required to certify impact to recreational ocean uses, such as whether they will generate water quality impacts or sediment flows. This would be similar to what occurs with new road projects.[334] The coastal communities of California already have some of the highest population densities in the United States.[335] Thus, a moratorium on new construction in areas within the coastal zone may be appropriate. Another alternative would be to only allow small-scale construction, such as accessory dwelling units, to provide more affordable housing stock without creating environmental impacts.[336] Furthermore, permitting authorities should require new projects to leverage technology to minimize the chance of pollution of recreational environments.[337] Although it may make approval processes for new

334. *See* CAL. PUB. RES. CODE § 21003 (West 2019) (providing for environmental impact review as part of permitting process). *See, e.g.*, CALTRANS, *supra* note 104, at 3-29 - 3-35 (reporting impact proposed road might have on nearby water quality)

335. Wendell Cox, *California's Dense Suburbs and Urbanization*, NEWGEOGRAPHY (Mar. 15, 2018), http://www.newgeography.com/content/005908-californias-dense-suburbs-and-urbanization (noting while density in California coastal communities is lower than urban cores of cities developed before automobiles, current density of California coastal communities is much higher than anywhere else in United States). *But see* Mac Taylor, *California's High Housing Costs: Causes and Consequences* 13 (2015), https://lao.ca.gov/reports/2015/finance/housing-costs/housing-costs.pdf (arguing that density of ten units per acre in California coastal communities is lower than average of fourteen units per acre).

336. *See, e.g.*, A.B. 2939, 2017-2018 Gen. Assemb., Reg. Sess. (Cal. 2018) (promoting construction of accessory dwelling units in multifamily units); *City of Seattle, Accessory Dwelling Units: Final Environmental Impact Statement* 4-73–4-76 (2018), http://www.seattle.gov/Documents/Departments/Council/MAIN_ADU_FEIS_2018.pdf (providing that accessory dwelling units would have negligible environmental impact).

337. *See* Connally, *supra* note 161 (using new trash can technology to reduce pollution and clean beaches). For example, in tourist areas, "smart" trash cans that only open when a person is depositing trash in the bin and close right away afterwards will serve to reduce the amount of trash that gets carried by wind or birds and deposited in the recreational ocean environment. *Id.* Many of the beaches at surfing breaks that the author has visited in Southern California have trash cans with open tops. *Id.* When strong winds pick up, or seagulls raid the trash cans after tourists have left the beach, the trash can often end up in the surfing lineup. *Id.* While this may not explicitly create a health risk for surfers, it does raise aesthetic problems and also concerns about harm to wildlife. *Id.* Requiring new technologies for new projects and retrofitting existing facilities with technologies such as "smart" trash cans would alleviate much of this problem. *See* Connally, *supra* note 161.

projects longer, requiring certification of impacts of new development to ocean recreational sites will give stakeholders and planners the information needed to make an informed decision and to protect ocean recreational sites.

Second, in order to better return the ocean to its natural condition, existing ocean structures should be dismantled if they no longer serve the purpose for which they were originally needed.[338] For example, the Long Beach breakwater has outlived its purpose in creating a safe harbor for Naval vessels.[339] Using Coastal and Marine Spatial Planning, this type of obsolete ocean development should be removed in order to promote recreational use.[340] Additionally, this would benefit the local community through additional revenue.[341] In terms of obsolete oil platforms, each lease requires full decommissioning of the platform at the operator's expense.[342] The California Coastal Commission should ensure that this happens in a swift manner. Decommissioning oil platforms creates oil pollution concerns, however, that cannot be fully mitigated.[343] There are alternatives that reduce the contamination risk or may even enhance the oil platform area through artificial reef construction.[344] Since marine spatial planning is a dynamic process, structures that impact recreational sources should be periodically reevaluated to minimize further impacts, or to the extent possible, to restore previously degraded sites.

Third, current oil industry practices should be changed in order to minimize the risk of an oil spill that would impact recreational users. The risk of water quality impacts from oil pollution is not only one of the biggest threats to sea life, it is also one of the

338. *See* N.Z. DEP'T OF CONSERVATION, COASTAL POLICY STATEMENT POLICY 6: ACTIVITIES IN THE COASTAL ENVIRONMENT (2010) (requiring removal of structures with no functional or aesthetic purpose).

339. *See* Wisckol, *supra* note 50 (discussing push to remove Long Beach breakwater and return surfing to area).

340. *See Long Beach Breakwater*, SURFRIDER FOUND. LONG BEACH, https://longbeach.surfrider.org/sink-the-breakwater/ (last visited Jan. 19, 2019) (listing two attempts to remove Long Beach breakwater).

341. *See* Wisckol, *supra* note 50 (suggesting removing the breakwater would lead to millions more in local revenue). *See also id.* (stating precise solution to restoring pre-breakwater habitat is still in debate).

342. *See* Bernstein et al., *supra* note 25, at xiv (discussing typical requirements platform owners have in decommissioning platform).

343. *See id.* at 54 (discussing oil contamination concerns in decommissioning process).

344. *Id.* at 55 (discussing removal of structure down to eighty-five-foot depth and leaving remainder in place as artificial reef).

biggest threats that recreational water-contact users face.[345] The transfer of oil at sea can cause oil spill and further pollution.[346] Thus, finding measures to limit or prevent the need for at-sea oil transfer would greatly reduce the risk of oil spillage.

One measure in this vein would be shortening or terminating the lease of the El Segundo offshore oil facility when it is set for renewal in 2040.[347] This would be in line with Coastal and Marine Spatial Planning goals because it would interject a more dynamic nature into the use of the South Bay and allow greater flexibility to prioritize recreational uses, especially given the number of surfing locations within the vicinity of the terminal.[348] This particular terminal had an oil spill in 1991 that resulted in oil washing ashore at popular surfing locations such as Malibu.[349] Moving oil transfer from the offshore terminal at the El Segundo facility and creating capacity for very large, deep-draft vessels at the Port of Los Angeles could reduce the risk from spills in the offshore environment.[350] Additionally, this would end the necessity for "lightering," which is the process of transferring oil from a supertanker to smaller vessels at sea in order to deliver it at port.[351] An oil spill is more easily contained within the harbor than in the open ocean.[352] For instance, preventative measures such as pre-emptively placing oil containment booms around a vessel transferring oil can be done in a harbor but not at sea.[353] Based on the risks of oil spills from offshore oil transfers affecting ocean ecology and recreational sites, the most effective method to reduce risk while promoting the in-

345. *See Ocean Protection*, SURFRIDER FOUND., https://www.surfrider.org/initiatives/ocean-protection (last visited Jan. 31, 2020) (discussing threat of oil contamination on recreational use of coastal areas).

346. *See e.g.*, MEUX, ET AL., *supra* note 27, at 4-1 (discussing 1991 oil spill resulting in release of 27,720 gallons of oil); Carma Hassan, *Small amount of crude oil spilled during oil transfer in Washington state*, CNN (Nov. 17, 2019, 10:18 PM) (reporting on oil spill occurring during transfer of oil).

347. *See* Barboza, *supra* note 26 (discussing lease of platform through 2040).

348. *See id.*; *see also Los Angeles County Surf Reports and Cams*, SURFLINE, https://www.surfline.com/surf-reports-forecasts-cams/united-states/california/los-angeles-county/5368381 (last visited Feb. 15, 2020) (displaying surf areas in Los Angeles County).

349. MEUX, ET AL., *supra* note 27, at 4-2 (discussing 1991 oil spill resulting in release of 27,720 gallons of oil).

350. *See id.* at 4-32 (discussing possible ramifications of an oil transfer accident).

351. *See id.* at 4-17-18 (discussing process of lightering and its environmental impact).

352. *See id.* (discussing lightering area as being twenty miles off coast).

353. *See id.* at 4-13 (discussing ineffectiveness of pre-booming at sea when compared to harbor).

dustry is to expand the ability of ports to handle very large oil tanker ships and end offshore oil transfers.[354]

Fourth, preventing construction of new offshore oil drilling platforms would be another Coastal and Marine Spatial Planning proposal to limit the risk of oil pollution from spills. This is currently a contentious issue between the state of California and the federal government.[355] Since 1994, California has prohibited new leases for offshore oil drilling platforms within state territorial waters.[356] In 2018, however the federal government indicated that it wanted to expand offshore oil and gas leases along the outer continental shelf, which is within federal jurisdiction.[357] California responded by enacting a law to prohibit approval for pipelines or other facilities within state territorial waters that could be used for new offshore oil platforms.[358] California's action on preventing new offshore oil drilling is in line with Marine Spatial Planning principles of prioritizing recreational ocean users over competing uses by minimizing the risk of oil pollution from new drilling platforms and pipelines.

Fifth, marine spatial planners should create additional Marine Protected Areas specifically for surfing and diving locations and restrict boat traffic, fishing, and anchoring within through those areas. Limitations on boat traffic, fishing, and anchoring near recreational sites, especially surfing breaks, would be a helpful marine spatial planning tool to improve water quality at surfing locations.[359] This would be especially beneficial in surfing areas such

354. *See* Meux, *supra* note 27, at 4-18 (discussing risks of offshore oil transfers).

355. *See* Rogers, *supra* note 257 (reporting California governor Jerry Brown has signed law to restrict federal government's attempt to increase offshore drilling). *But see* Ferrar, *supra* note 249 (suggesting federal government and California governor Jerry Brown were aligned in expanding offshore drilling).

356. CAL. PUB. RES. CODE § 6243 (West 2018).

357. Lisa Friedman, *Trump Moves to Open Nearly All Offshore Waters to Drilling*, N.Y. TIMES (Jan. 4, 2018), https://www.nytimes.com/2018/01/04/climate/trump-offshore-drilling.html.

358. Rogers, *supra* note 257 (reporting California governor Jerry Brown has signed law to restrict federal government's attempt to increase offshore drilling); 2018 Cal. Legis. Serv. Ch. 309 (S.B. 834) (West); CAL. PUB. RES. CODE § 6245(a) (201) (limiting new leases to convey oil).

359. Boat traffic within many SCUBA sites is necessary to bring divers to the site. These boats, however, do not stay in the dive site for extended periods as would boats anchoring overnight. In addition to the water quality enhancements provided by limiting boats from transiting or especially anchoring near surfing locations, restrictions on fishing near surfing or diving sites would also reduce chances of encounters between humans and sharks. *See* PETA, *To Prevent Shark Attacks, Stop Fishing*, (Aug. 12, 2015), https://www.peta.org/blog/to-prevent-shark-attacks-stop-fishing/ (suggesting presence of fishing hazards increase likelihood of

as Doheny State Beach in Orange County. Doheny sits just outside of the mouth of the Dana Point harbor, which is home to 2,400 boat slips.[360] As a result, the harbor generates significant boat traffic.[361] This severely degrades water quality at the neighboring surf break, especially from boaters anchoring near the harbor entrance and illegally discharging into the waters near the surf break.[362] While the City of Dana Point's municipal code prevents discharge of waste from vessels and limits anchoring to seventy-two hours, the water quality in this area is still poor.[363] More stringent laws, such as preventing any anchoring whatsoever (requiring boaters to use the guest boat slips or moorings within the harbor) would mitigate some of the poor water quality at this site. Other similarly-situated areas, such as the iconic outlet of the Newport Beach harbor, would benefit from a provision like this.[364] Because Marine Spatial Planning is a dynamic process, restrictions such as these could be implemented and then later modified based on resulting impacts shown by water quality data.[365] Additionally, instead of a hodgepodge of local municipal codes governing anchoring near recreational sites, it would be beneficial to have uniform regulation promulgated by the authorities responsible for Coastal and Marine Spatial Planning, such as the California Coastal Commission or Ocean Protection Council.[366]

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shark-human conflicts); *see also* Marisa Gerber and James Queally, *Shark Attacks Swimmer Near Manhattan Beach Pier*, LA TIMES (July 5, 2014), https://www.latimes.com/local/lanow/la-me-ln-shark-attack-20140705-story.html (describing how shark had been hooked by fisherman on pier and bit swimmer in water as shark was trying to get free of hook).

360. *About Us*, DANA POINT HARBOR, https://danapointharbor.com/boating/marina-info/ (last visited Feb. 15, 2020).

361. *See id.* (stating harbor is home to 2,500 vessels and potentially hundreds of visiting vessels per day).

362. *See Heal the Bay*, *supra* note 1, at 57-58 (giving Dohney beaches in Dana Point relatively low grade on beach quality); Rick Wilson, *Doheny – The Plot Thickens*, SURFRIDER (Aug. 31, 2012), https://www.surfrider.org/coastal-blog/entry/doheny-the-plot-thickens (stating Doheny beach suffers from sewage pollution partially caused by boaters).

363. DANA POINT, CAL., CODE § 6.48.040 (prescribing seventy-two-hour maximum anchoring period outside of Dana Point harbor); DANA POINT, CAL. CODE §§ 6.48.060, 6.48.070 (prohibiting discharges of human waste or any other discharges from vessels within Dana Point's jurisdictional waters).

364. *See* THE ENDLESS SUMMER (Bruce Brown & Robert Bagley June 15, 1966) (displaying surfing popularity of outlet in renowned Newport Beach harbor). The outlet of the Newport Beach harbor is home to a famous bodysurfing spot known as "The Wedge." *Id.*

365. *See* TUNDI AGARDY, OCEAN ZONING, *supra* note 150, at 45-46 (discussing need to be strategic in ocean zoning process).

366. CAL. COASTAL COMM'N, *Our Mission: Protecting and Enhancing California's Coast*, https://www.coastal.ca.gov/ (last visited Feb. 15 2020); OCEAN PROTECTION

Sixth, in terms of the coastal component of Coastal and Marine Spatial Planning, one of the strongest water quality improvement measures for the already developed, urbanized areas of Southern California would be to ban application of yard fertilizers and herbicides. These fertilizers and herbicides run off through the stormwater system to the ocean when it rains.[367] Many stormwater systems discharge near recreational sites such as surfing breaks.[368] While these types of measures do not currently appear to have been proposed in Southern California, local governments in Florida have proposed similar measures to reduce toxic algal blooms.[369] Water quality improvement measures to limit runoff from current coastal development would diminish the impact from the main water quality problems that recreational ocean sites face.[370]

Together, these specific proposals provide a comprehensive set of tools that planners can use to protect ocean recreational sites through controls on other ocean activities and appropriate vetting and controls of development in coastal watersheds. Additionally, Coastal and Marine Spatial Planning gives planners the ability to restore previously destroyed sites such as the Long Beach breakwater. This brings favorable economic growth through expansion of available recreational resources.

IV. CONCLUSION

Surfing and diving resources have an enormous economic impact on the coastal communities of California, which has an astounding number of quality diving locations and surfing breaks.[371]

COUNCIL (providing for protection of California coastline through planning and regulation); *About*, OCEAN PROT. COUNCIL http://www.opc.ca.gov/about/ (last visited Feb 15. 2020) (protecting California coastline through coordinating state environmental efforts).

367. *How Fertilizers Harm Earth More than Help Your Lawn*, SCIENTIFIC AMERICAN, https://www.scientificamerican.com/article/how-fertilizers-harm-earth/ (last visited Feb. 15, 2020) (discussing harm of fertilizer runoff).

368. *See, e.g.*, María José Durán, *What are we surfing in? A look at Stormwater Infrastructure in La Jolla*, LA JOLLA LIGHT (Oct. 12, 2016) https://www.lajollalight.com/news/sd-water-quality-surf-20161012-story.html (discussing impact of stormwater runoff for surfers in La Jolla).

369. Mascareñas, *supra* note 199 (discussing proposed measure to place sensors on pipes to reduce fertilizer runoff).

370. *How Fertilizers Harm Earth More than Help Your Lawn*, SCIENTIFIC AMERICAN, https://www.scientificamerican.com/article/how-fertilizers-harm-earth/ (last visited Feb. 15, 2020) (discussing harm of fertilizer runoff).

371. Peter Fimrite, *Wave of Support Gets Surfing Named California's Official State Sport*, S.F. CHRON. (Aug. 20, 2018) https://www.sfchronicle.com/bayarea/article/Surfing-is-now-California-s-official-state-13170109.php (discussing economic boom surfing has brought to California).

These resources are under threat from coastal development, however, and increasing use of the marine environment.[372] The California Coastal Act, federal statutes, the network of Marine Protected Areas, and private designations of surfing reserves have added a modicum of protection to these resources, albeit inconsistently.[373] Coastal and Marine Spatial Planning provides the solution to leverage both new technology and regulatory systems to preserve surfing and diving resources for the ever-expanding populations who wants to use them. Coastal and Marine Spatial Planning would also provide benefits to other ocean uses, such as oil industry, shipping, and fishing, because it can specifically set aside areas for those uses based on the most effective use of ocean space and reduce potential for conflict. While implementing Coastal and Marine Spatial Planning in Southern California's coastal environment would require significant effort, current law provides adequate authority.

Within the realm of Coastal and Marine Spatial Planning, both ocean and coastal planners have many tools at their disposal to prioritize these fragile recreational resources over coastal development and competing ocean uses that may have detrimental effects, such as boating or the petroleum industry. Coastal and Marine Spatial Planning also provides mechanisms to restore some previously destroyed recreational resources by removing obsolete ocean features. The most prominent of such features would be the Long Beach breakwater.[374]

The keys to the success of Coastal and Marine Spatial Planning to protect ocean recreational resources will be planners taking the mandate of the California Coastal Act to protect recreational resources seriously, the integration of stakeholder groups into the planning process, and the close integration between marine planners and coastal planners to ensure uniformity of goals. Of course, there are competing interests, such as ever-increasing demand for affordable housing near coastal resources, which will continue to drive pressure for development.[375] Planners should prioritize preservation of ocean recreational resources, however, which will have a

372. For a discussion of the degradation of diving and surfing resources, see *supra* notes 45-64.

373. For a discussion of California statutes and regulations concerning coastal protection, see *supra* notes 83-106.

374. *See* Wisckol, *supra* note 50 (discussing push to remove Long Beach breakwater and return surfing to area)

375. *See* LEGISLATIVE ANALYST'S OFFICE, PERSPECTIVES ON HELPING LOW-INCOME CALIFORNIANS AFFORD HOUSING (Feb. 9, 2016) (discussing shortage of low-income housing in California's urban coastal communities).

far-reaching impact beyond just coastal communities and will also promote the economy of coastal communities.[376] If planners implement Coastal and Marine Spatial Planning with these mandates and goals, they will be able to protect these valuable resources for generations to come.

376. See Fimrite, *supra* note 372 (discussing economic importance of surfing to state of California).