

# No Firm Ground: Fifth Amendment Takings and Sea-Level Rise

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*Rising seas are encroaching on private properties along the California coast at alarming rates and rapidly changing the mean high tide line, which serves as the legal boundary determining the relative rights of the state and private property owners. This Note examines the existing framework for Fifth Amendment takings claims and the applicability of takings doctrine to disputes arising out of sea-level rise in California. Further, it examines nuances of Takings Clause jurisprudence likely to be implicated by sea-level rise, including the background principles exception, the public trust doctrine, and the avulsion doctrine. Ultimately, it concludes that the method for determining the mean high tide line needs modification if it is to serve as an effective means of determining who has a right to land impacted by sea-level rise. This Note also addresses the possibility of innovative Takings Clause claims as vehicles for impactful climate change litigation by exploring the possibility of asserting passive takings and taking claims grounded in public trust failures. Overall, this Note challenges existing assumptions and considers innovative legal challenges that are bound to emerge as the effects of climate change impact the California coastline. The importance of this extends beyond academic intrigue, as the state and private owners face daunting uncertainty regarding their respective rights as sea-levels rise.*

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## INTRODUCTION

At the mercy of rising seas, the California coastline already experiences storm floods, erosion, and tidal floods.<sup>1</sup> The problem will only grow, as climate change research projects possible sea-level rise totaling more than eight feet by 2100.<sup>2</sup> A durable regulatory framework is critical to California's success in adapting to climate change and resulting sea-level rise,<sup>3</sup> particularly in response to impending Fifth Amendment Takings Clause litigation.

As sea-level rise worsens, the law will be applied to coastal property issues in unprecedented ways. An examination of both the existing legal landscape as well as areas for potential legal innovation is critical to understanding the ways in which sea-level rise will challenge current Takings Clause interpretation.<sup>4</sup> This Note argues that the unprecedented challenges posed by climate change mandate a forceful review of the Takings Clause of the Fifth Amendment and its application to claims based in sea-level rise. A better understanding of the rights at play is critical to give both private landowners and the State any sense

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1. See CAL. NAT. RES. AGENCY & CAL. OCEAN PROT. COUNCIL, STATE OF CALIFORNIA SEA-LEVEL RISE GUIDANCE: 2018 UPDATE 12 (2018) [hereinafter SEA-LEVEL RISE GUIDANCE].

2. U.S. GLOB. CHANGE RESEARCH PROGRAM, CLIMATE SCIENCE SPECIAL REPORT: FOURTH NATIONAL CLIMATE ASSESSMENT 34 (2017) [hereinafter CLIMATE SCIENCE SPECIAL REPORT].

3. WORKING GRP. OF THE CAL. OCEAN PROT. COUNCIL SCI. ADVISORY TEAM, RISING SEAS IN CALIFORNIA: AN UPDATE ON SEA-LEVEL RISE SCIENCE 4 (2017) [hereinafter RISING SEAS IN CALIFORNIA].

4. See J. Peter Byrne, *The Cathedral Engulfed: Sea-Level Rise, Property Rights, and Time*, 73 LA. L. REV. 69, 69 (2012) ("New forms of regulation and shifts in the content of common law rules will generate novel claims of regulatory takings, confronting courts with puzzling questions of fundamental rights under unprecedented climactic conditions.").

of predictability. Further, unresolved questions regarding the boundaries of the takings doctrine open the door for groundbreaking climate change litigation opportunities. This Note argues that passive takings claims and failure of public trust stewardship claims are two intriguing legal theories rich with potential to incentivize government action to mitigate the risks and impacts of sea-level rise.

While the potential for groundbreaking changes to the landscape of climate change law is intriguing, arguably more urgent is California's need to successfully implement climate mitigation strategies through regulation.<sup>5</sup> Thus, the legal framework that exists to address sea level rise must be examined and developed to provide greater predictability to both the State and property owners as the shoreline begins to experience unprecedented, and potentially extreme, sea-level rise as the result of climate change.<sup>6</sup>

This Note is structured as follows. Part I addresses the science underlying sea-level rise and the projected rate of rise in California. Part II focuses on the Fifth Amendment Takings Clause by discussing both Takings Clause precedent and doctrinal challenges posed by the background principles exception, the public trust doctrine, and the common law doctrine of avulsion. Furthermore, Part II suggests modifications to the high tide line that may better serve the State and private property owners as sea-level rise occurs. Part III describes the impact that innovative takings litigation in the form of passive takings claims and failure of public trust stewardship claims might have on the landscape of climate change litigation. Such claims could incentivize regulatory action to address sea-level rise while providing recourse to those impacted by rising sea-levels. Overall, this Note seeks to further the discussion surrounding sea-level rise and takings claims by challenging existing assumptions and considering innovative legal challenges bound to emerge as the effects of climate change challenge the California coastline in unprecedented ways.

## I. SEA-LEVEL RISE IN CALIFORNIA

### A. PROJECTED RATE OF RISE IN CALIFORNIA

Global mean sea level has increased seven to eight inches since 1900.<sup>7</sup> According to the United States Fourth National Climate Assessment ("Climate Assessment"), recent research suggests that sea-level rise greater than eight feet is possible by 2100.<sup>8</sup> Uncertainty surrounding sea-level rise projections triggers

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5. See RISING SEAS IN CALIFORNIA, *supra* note 3, at 4 (discussing California's need to implement a framework to deal with rising sea levels).

6. See *id.* ("A probabilistic approach to sea-level rise projections, combined with a clear articulation of the implications of uncertainty and the decision-support needs of affected stakeholders, is the most appropriate approach for use in a policy setting.")

7. CLIMATE SCIENCE SPECIAL REPORT, *supra* note 2, at 333.

8. *Id.*

even greater urgency for addressing long-term sea-level rise in order to best mitigate related impact and risk to coastal development and infrastructure.<sup>9</sup>

One major contributor to future California sea-level rise will be polar ice sheet retreat, particularly in the Antarctic.<sup>10</sup> As ice sheets lose mass, the sheets' gravitational pull on the surrounding ocean decreases, triggering unexpected consequences for sea-level rise.<sup>11</sup> Coastlines more than 4,000 miles away from the melting ice sheet will experience greater than expected sea-level rise as a result of this gravitational shift.<sup>12</sup> As the Antarctic experiences this effect, coastlines in the Northern Hemisphere experience sea-level rise.<sup>13</sup>

Antarctica's continued melting will be of great consequence to California coasts.<sup>14</sup> The California Ocean Science Trust estimates that for every twelve inches of global sea-level rise resulting from the retreat of West Antarctica, the California coast will experience approximately fifteen inches of local sea-level rise.<sup>15</sup> Concerns surrounding these projections are underscored by the fact that the West Antarctic Ice Sheet is already experiencing irreversible changes and is acknowledged to be the most vulnerable major ice sheet to the impacts of global climate change.<sup>16</sup>

#### B. THE CONSEQUENCES OF RISING SEAS

Danger lies in underestimating the impact that sea-level rise will have on the California coastline. Indeed, rising sea levels already impact the California coast in critical ways through increased levels of storm flooding, erosion, and tidal flooding, as examples.<sup>17</sup> The Climate Assessment asserts with "very high confidence" that this century will see an increase in the depth, frequency, and extent of tidal flooding nationally.<sup>18</sup> Indeed, the occurrence of tidal flooding severe enough to trigger the execution of local emergency preparedness measures in La Jolla, California has increased by between five and ten times the frequency of occurrence in the 1960s, demonstrating that California is not exempt from this national trend.<sup>19</sup>

While long-term sea-level rise will have an incredible impact on the California coastline, short-term sea-level rise triggered by events such as El Niño, storms, and seasonal cycles is more likely to prove immediately

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9. RISING SEAS IN CALIFORNIA, *supra* note 3, at 34 ("In this context of likely continued and unquantifiable uncertainties, incorporating long-range planning for sea-level rise in decisions is *increasingly urgent*." (emphasis added)).

10. *Id.* at 12.

11. *Id.*

12. *Id.* at 12–13.

13. *Id.* at 13.

14. *Id.*

15. *Id.*

16. *Id.*

17. SEA-LEVEL RISE GUIDANCE, *supra* note 1, at 12.

18. CLIMATE SCIENCE SPECIAL REPORT, *supra* note 2, at 333.

19. *Id.* at 347.

consequential.<sup>20</sup> During the twentieth and twenty-first centuries, El Niño events caused the majority of damage to the California coastline.<sup>21</sup> These events are particularly impactful as they combine the effects of elevated sea levels, high tides, and storm waves.<sup>22</sup>

Climate change will impact the severity of these events in two distinct ways. First, gradual sea-level rise caused by climate change will increase the risks posed by these short-term events to coastal development and infrastructure.<sup>23</sup> Second, a warmer climate may increase the frequency with which El Niño events occur, which would logically increase the frequency of harmful storm events.<sup>24</sup> The severe damage that these short-term sea-level rise events are capable of imposing on the California coastline emphasizes the importance of developing a “takings” legal framework capable of addressing the impacts of sea-level rise. The likelihood that short-term sea-level rise events will occur more frequently<sup>25</sup> makes addressing their impacts all the more urgent.

Short-term extreme storms pose a unique challenge, as they strike occasionally, are short in duration, and are highly variable.<sup>26</sup> These storms can trigger storm surge, which occurs when strong winds combine with low barometric pressure to temporarily elevate sea-levels and force seawater onto the shoreline.<sup>27</sup> Although storm surge impacts Gulf and Atlantic Coast states most severely, the impact on California sea levels is significant and thus equally important to address.<sup>28</sup> Past major winter storms in California brought storm surge with sea-levels that surpassed predicted levels by as much as three feet, a height capable of tremendous damage to coastal infrastructure and development.<sup>29</sup> Storm surge, combined with high tides and the dynamic impact of waves, creates damaging conditions with the potential to cause extreme coastal erosion.<sup>30</sup>

## II. FIFTH AMENDMENT TAKINGS

Under the Fifth Amendment to the United States Constitution, just compensation must be provided when private property is taken for public use.<sup>31</sup> State action is subject to the requirements of the Fifth Amendment through the Fourteenth Amendment.<sup>32</sup> The Supreme Court’s takings jurisprudence

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20. RISING SEAS IN CALIFORNIA, *supra* note 3, at 17.

21. *Id.*

22. *Id.*

23. *Id.*

24. *Id.*

25. *Id.*

26. CLIMATE SCIENCE SPECIAL REPORT, *supra* note 2, at 258.

27. *Id.*

28. *See* RISING SEAS IN CALIFORNIA, *supra* note 3, at 17 (discussing the impact of storm surges on California’s coasts).

29. *Id.*

30. CLIMATE SCIENCE SPECIAL REPORT, *supra* note 2, at 348.

31. U.S. CONST. amend. V.

32. *Chi., Burlington & Quincy R.R. Co. v. Chicago*, 166 U.S. 226, 241 (1897).

comprises a variety of analytical approaches rather than a single bright-line standard. In limited circumstances, a categorical taking is effected where a “total taking” occurs,<sup>33</sup> in which property is denied “all economically beneficial or productive use.”<sup>34</sup>

While one can perhaps think of instances in which regulations intended to address sea-level rise render property essentially valueless, thus effecting a categorical taking, regulatory takings claims are better analyzed under the *Penn Central* test.<sup>35</sup> Short-term sea-level rise events are of more immediate concern than long-term sea-level rise with respect to their ability to cause damage to coastal infrastructure and development.<sup>36</sup> Because of the temporary nature of the flooding associated with elevated sea levels, high tides, and storm waves resulting from these short-term events<sup>37</sup>, a total taking depriving property of “all economically beneficial or productive use” is unlikely to occur from this type of sea-level rise.<sup>38</sup> Thus, regulatory takings claims of this type must be argued in fact-specific analysis through the *Penn Central* test.

In *Penn Central Transportation Co. v. New York City*, the Supreme Court held that a New York City historic preservation law that prohibited the addition of an office tower above Grand Central Station did not effect a taking that required compensation to be provided to the property owner.<sup>39</sup> The Court identified three factors to determine whether government action effects a taking: the regulation’s economic impact, the degree to which the regulation interferes with investment-backed expectations, and the character of the government’s action.<sup>40</sup> The Court also clarified that an actual physical invasion of property by the government is more likely to constitute a taking than when a public program intended to “promote the common good” incidentally affects an owner’s use of his or her property.<sup>41</sup> In fact, the Court stated that where “‘health, safety, morals, or general welfare’ would be promoted by prohibiting particular contemplated uses of land,” land-use regulations would be upheld even if they “destroyed or adversely affected recognized real property interests.”<sup>42</sup>

The Supreme Court’s decisions in *Penn Central* and other Takings Clause cases provide a useful framework for assessing the merits of a takings claim.<sup>43</sup> However, it is difficult to anticipate how the Court might apply existing precedent to a takings claim arising out of coastal flooding. In *Arkansas Game & Fish Commission v. United States*, the Supreme Court held that government-

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33. *Lucas v. S.C. Coastal Council*, 505 U.S. 1003, 1030 (1992).

34. *Id.* at 1015.

35. See Byrne, *supra* note 4, at 86 (“The Supreme Court’s 1978 *Penn Central* decision canonized an ad hoc, fact-sensitive approach to determining whether a regulation effects a regulatory taking.”).

36. RISING SEAS IN CALIFORNIA, *supra* note 3, at 17.

37. *Id.*

38. *Lucas*, 505 U.S. at 1015.

39. *Penn Cent. Transp. Co. v. New York City*, 438 U.S. 104, 138 (1978).

40. *Id.* at 124.

41. *Id.*

42. *Id.* at 125 (quoting *Nectow v. Cambridge*, 277 U.S. 183, 188 (1928)).

43. See, e.g., *id.* at 123–37; see also *Lucas*, 505 U.S. 1003.

induced, temporary flooding could constitute a Fifth Amendment taking of property, thereby requiring the government to compensate the owner of the flooded property.<sup>44</sup> The case concerned the repeated flooding of an Arkansas Game and Fish Commission-owned Wildlife Management Area adjacent to a river.<sup>45</sup> The U.S. Army Corps of Engineers (“Corps”) authorized the flooding by planning to increase the rates at which water was released from an upstream dam.<sup>46</sup> This destroyed large amounts of timber and disrupted the use and enjoyment of the public land. The Court stated that the degree to which the invasion is either the intended or foreseeable result of government action is relevant to the takings inquiry.<sup>47</sup> Other critical facts underlying the Court’s decision were the Commission’s repeated complaints to the Corps about the planned deviations and the severity of the interference and destructive impact of the flooding on the property.<sup>48</sup>

Notably, the case arose out of river flooding caused by affirmative government action. The Court did not address whether the same principles might extend to shoreline flooding caused by sea-level rise. Moreover, the Court did not address whether a government omission could constitute a Fifth Amendment Taking in the context of flooding. Thus, while the Court’s decision that government-induced temporary flooding can require compensation under the Takings Clause may have opened the door to the possibility that coastal flooding can constitute a taking, this conclusion remains speculative. The implications of this type of claim will be discussed in greater detail in Part III of this Note.

An understanding of the Supreme Court’s Takings Clause jurisprudence is necessary to grasp how the Takings Clause applies to sea-level rise. Nuances in the form of possible exceptions to the takings doctrine exist and require examination. These nuances include the background principles exception, the public trust doctrine, and the common law doctrine of avulsion. Part III of this Note proceeds with a discussion of each exception and how it might apply to sea-level-rise-based takings claims.

### III. EXCEPTIONS TO TAKINGS CLAUSE LIABILITY

#### A. THE BACKGROUND PRINCIPLES EXCEPTION

One relevant limitation to an otherwise successful takings claim is the background principles exception. Under *Lucas v. South Carolina Coastal Council*, no taking occurs when the background principles of nuisance and property law align with the State’s regulatory prohibitions on land use.<sup>49</sup> Where the background principles of nuisance and property law inhere restrictions into

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44. 568 U.S. 23, 38 (2012).

45. *Id.* at 26–27.

46. *Id.* at 26.

47. *Id.* at 39.

48. *Id.*

49. 505 U.S. 1003, 1029 (1992).

the title of the land, state regulations simply duplicate the effect of already present limitations.<sup>50</sup> Thus, a taking occurs only when a regulation reaches beyond the limitations imposed by background principles to render land absent of all economic or beneficial uses.<sup>51</sup> No firm guidance exists as to what exactly qualifies as a background principle, but the public trust doctrine provides an example of a background principle well-established as sufficient to defeat a takings claim.<sup>52</sup>

#### B. THE PUBLIC TRUST DOCTRINE

The public trust doctrine is deeply embedded in American common law. Under English common law, the land beneath navigable waters was a resource to be preserved for the benefit of the public.<sup>53</sup> Extending this principle to American common law established that states own these lands to maintain for common use.<sup>54</sup> Thus, each state acquired title to the land under its tidewaters at the time it gained statehood.<sup>55</sup>

The doctrine is also held in high esteem in California jurisprudence. Indeed, the California Supreme Court described the doctrine as a “duty of the state to protect the people’s common heritage,” including all coastal land.<sup>56</sup> Thus, the purpose of the doctrine is more than an “affirmation of state power to use private property for public purposes.”<sup>57</sup> As early as 1971, the California Supreme Court asserted that protection of coastal lands is a prime purpose of the doctrine.<sup>58</sup> Particularly, the court acknowledged the importance of protecting the “climate of the area” through application of the doctrine.<sup>59</sup> In support of this proposition, the court highlighted the flexible nature of the public trust doctrine, which must shift to encompass evolving public needs.<sup>60</sup>

Several notable holdings establish the public trust doctrine as a background principle that limits liability for a taking. In *Palazzolo v. State*, a landowner seeking to develop coastal wetlands brought a takings claim after state regulators denied his permit application.<sup>61</sup> On remand from the U.S. Supreme Court, a Rhode Island court determined that the state’s public trust doctrine served as a background principle sufficient to insulate state regulators from takings claims.<sup>62</sup>

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50. *Id.*

51. *Id.* at 1030.

52. John D. Echeverria, *The Public Trust Doctrine as a Background Principles Defense in Takings Litigation*, 45 U.C. DAVIS L. REV. 931, 933 (2012).

53. *Martin v. Lessee of Waddell*, 41 U.S. (16 Pet.) 367, 413–14 (1842).

54. *Id.*

55. *Borax Consol., Ltd. v. Los Angeles*, 296 U.S. 10, 15 (1935).

56. *Nat’l Audubon Soc’y v. Superior Court*, 658 P.2d 709, 724 (Cal. 1983).

57. *Id.*

58. *Marks v. Whitney*, 491 P.2d 374, 380–81 (Cal. 1971).

59. *Id.*

60. *Id.* at 379–80.

61. *Palazzolo v. State*, No. WM 88-0297, 2005 WL 1645974, at \*1 (R.I. Super. Ct. July 5, 2005).

62. *Id.* at \*6–7.

The Ninth Circuit reached the same conclusion in *Esplanade Properties v. City of Seattle*.<sup>63</sup> There, the City of Seattle denied a public developer's application for a permit to develop Puget Sound tidelands.<sup>64</sup> The court rejected the developer's takings claim on grounds that Washington's public trust doctrine served as a background principle amounting to an inherent limitation on the right to develop.<sup>65</sup> Notably, the U.S. Supreme Court denied a petition for writ of certiorari from this decision.<sup>66</sup>

Of course, it must not be forgotten that the background principles exception is not categorical.<sup>67</sup> A taking can still occur when a regulation reaches beyond the limitations imposed by background principles.<sup>68</sup> Despite this, the strength of the public trust doctrine as a background principle limiting takings liability is clearly illustrated by the above two cases.<sup>69</sup> Because of the inherent check on takings liability imposed by the doctrine, a more thorough examination of the nuances and limitations of the doctrine is provided below.

The outcome of sea-level-rise-based takings claims hinges on the definition of the mean high-tide line because it determines the geographic boundary of the public trust doctrine. The high-tide line is the result of a need for a workable means of determining property rights in order to resolve litigation between landowners and the state. A common law definition of the mean high-tide line emerged in accordance with the United States Coast and Geodetic Survey, which defines the mean high water line as "the average height of all the high waters at that place over a considerable period of time," and thereafter suggesting a period of 18.6 years as a meaningful astronomical average.<sup>70</sup> The common law definition of the high-tide line has been codified to define the jurisdiction of coastal regulatory agencies in California.<sup>71</sup> Thus, under California law, the mean high-tide line is determined by averaging the high tides occurring over an 18.6-year period.<sup>72</sup>

California's regulatory jurisdiction over coastal lands is therefore determined by the mean high-tide line, as the State holds title to all land below the high-tide line as navigable waters to be preserved for the benefit of the public.<sup>73</sup> Tidal waters, even if submerged, are not considered navigable waters if above the mean high-tide line, and are therefore not subject to the public trust

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63. 307 F.3d 978 (9th Cir. 2002).

64. *Id.* at 980.

65. *Id.* at 985.

66. *Esplanade Props., LLC v. City of Seattle*, 539 U.S. 901, 926 (2003).

67. *Lucas v. S.C. Coastal Council*, 505 U.S. 1052, 1030 (1992).

68. *Id.*

69. *See, e.g., Palazzolo v. State*, No. WM 88-0297, 2005 WL 1645974 (R.I. Super. Ct. July 5, 2005); *Esplanade Props., LLC v. City of Seattle*, 307 F.3d 978 (9th Cir. 2002), *cert denied*, 539 U.S. 926 (2003).

70. *Borax Consol., Ltd. v. Los Angeles*, 296 U.S. 10, 26-27 (1935).

71. CAL. GOV'T CODE § 66610(a) (West 2018) (referencing "mean high tide").

72. *Id.*

73. *Lechuza Villas W. v. Cal. Coastal Comm'n*, 70 Cal. Rptr. 2d 399, 413-14 (Ct. App. 1997).

doctrine by means of state ownership.<sup>74</sup> Notably, the legal boundary established by the mean high-tide line moves with the land as it builds or erodes.<sup>75</sup>

### C. PROPOSED ALTERATIONS TO THE METHOD OF DETERMINING THE MEAN HIGH-TIDE LINE

A sense of predictability seems to emerge from an overview of the public trust as a doctrine deeply rooted in English common law and bolstered by California case law. But this apparent doctrinal stability quickly becomes tenuous when considering the implications of sea-level rise. Consider the impact of unprecedented levels of sea-level rise in a short period of time. Under current forecasts, this is entirely possible.<sup>76</sup> Quickly rising seas could thwart the utility of determining the mean high-tide line over a period of 18.6 years. Indeed, a mean high-tide line could quickly become useless in the face of rapid sea-level rise affecting property interests in ways that render a suddenly outdated line unable to serve as a meaningful legal boundary. Further complicating matters is the potential impact of the common law doctrine of avulsion, which is discussed at length below.

An alteration to the method by which the mean high-tide line is determined may better serve property owners and the state in determining which tidal lands are subject to the public trust and thus relatively insulated from a takings claim. This could potentially be accomplished in several ways. One useful adjustment could come as a result of abandoning the 18.6-year period for determining the mean high tide line. Logically, the greater the change in the mean high-tide line from one period used to calculate an average until the next results in a less precise legal boundary. A shift to a shorter time period for determining the high-tide average could result in a mean high-tide line that more accurately represents the current high-tide average as the rate of sea-level rise increases.

Another option for increasing the accuracy of the mean high-tide line in the face of sea-level rise may be adding in a buffer zone over which the state could assert public trust ownership even beyond the established boundary line determined by the mean high tide line. Of course, implementation of a buffer zone raises concerns regarding state overreach and could raise further takings issues. One way of mitigating these concerns might be to establish a framework by which the state could demonstrate the conditions rendering the utilization of such a buffer zone necessary on a case by case basis. This would require tremendous administrative capacity but would result in a far more flexible system enabling protection of the public trust.

Of course, these two proposed alterations to the method by which the tidal boundary is determined are not exhaustive of all options available to construct a more useful system. Instead, they are proposals intended to advance a

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74. *Id.* at 418.

75. *Id.* at 410–11.

76. CLIMATE SCIENCE SPECIAL REPORT, *supra* note 2, at 333.

meaningful conversation regarding the likelihood that sea-level rise will render the current methodology increasingly unsuitable for accurately resolving property interest challenges arising from the impacts of sea-level rise.

#### D. THE AVULSION CHALLENGE

The common law doctrine of avulsion adds another layer to the puzzle. Avulsion occurs when land is either added or removed due to the rapid and often violent action of water or, in the alternative, when a sudden change in the physical location of the water boundary occurs.<sup>77</sup> The avulsion doctrine provides that property rights do not change when either of these events occur.<sup>78</sup> This is the case even though an owner's access to the land may have changed because of the avulsive event.<sup>79</sup>

The avulsion doctrine can be contrasted to the accretion doctrine, another common law water doctrine. The accretion doctrine applies where sand, soil, or other land on the edge of a body of water are added or lost such that the adjoining area of land is increased or decreased gradually and imperceptibly over time.<sup>80</sup> Unlike avulsion, accretion changes the ownership of the affected land.<sup>81</sup>

With gradual sea-level rise, the mean high-tide line slowly encroaches upon privately owned coastal lands, depriving owners of ownership under the doctrine of accretion and giving ownership of the land to the state through the public trust doctrine. But, as extreme short-term sea-level rise events become more common, damage to the California coastline caused by suddenly elevated sea levels, high tides, and storm waves might be deemed avulsive.<sup>82</sup> If avulsive, owners of coastal property would retain ownership following such events.<sup>83</sup> The question of whether—and when—the avulsion doctrine applies to the shoreline is thus likely to become quickly relevant as sea levels rise and change the California shoreline.

Though applied in other circumstances, California has yet to address whether the doctrine of avulsion applies to shoreline boundaries.<sup>84</sup> Outside of California, precedent addressing this issue is sparse. Conflicting holdings from Texas and Florida illustrate the uncertainty of predicting whether avulsion will apply to shoreline boundaries in California.<sup>85</sup> In *Siesta Properties, Inc. v. Hart*, a Florida District Court of Appeal held, without elaboration, that avulsion

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77. BRUCE S. FLUSHMAN, WATER BOUNDARIES: DEMYSTIFYING LAND BOUNDARIES ADJACENT TO TIDAL OR NAVIGABLE WATERS 94 (2002).

78. *Bohn v. Albertson*, 238 P.2d 128, 135–37 (Cal. Ct. App. 1951).

79. *Id.*

80. FLUSHMAN, *supra* note 77, at 92; Byrne, *supra* note 4, at 80.

81. Byrne, *supra* note 4, at 80.

82. See RISING SEAS IN CALIFORNIA, *supra* note 3, at 17 (discussing the possible elevation of sea levels and noting that this will cause erosion, thus possibly ultimately causing avulsion).

83. *Bohn*, 238 P.2d at 135–37.

84. See FLUSHMAN, *supra* note 77, at 134 (“In California, there are no reported cases . . .”).

85. Compare *Siesta Props., Inc. v. Hart*, 122 So. 2d 218, 223–24 (Fla. Dist. Ct. App. 1960) (applying the doctrine of avulsion after a hurricane to transfer title to land), with *City of Corpus Christi v. Davis*, 622 S.W.2d 640, 644 (Tex. App. 1981) (“It is usually held that title does not pass by avulsion.”).

applies to coastal property.<sup>86</sup> The Texas Court of Appeals elaborated on the applicability of avulsion to coastal property in *City of Corpus Christi v. Davis*. Acknowledging the “prime importance” of determining the applicability of the doctrine of avulsion to tidal lands, the court assumed its applicability for purposes of the opinion.<sup>87</sup> Despite this, the court then held that avulsion is only outcome determinative when one can show that the “total loss” of the shoreline resulted from avulsive forces.<sup>88</sup> The implications of this holding are profound because, under this logic, it seems nearly impossible to prove that a change in shoreline resulted, in its entirety, from avulsion. Indeed, accretion is imperceptible by definition.<sup>89</sup> It is unduly burdensome to require litigants to prove the total absence of something that cannot be perceived.<sup>90</sup> Under *Davis*, any degree of existing accretion would seemingly negate a claim of avulsion, regardless of the impact an avulsive event had on tidal boundaries.<sup>91</sup>

An examination of California’s general avulsion jurisprudence sheds light on the potential applicability of the doctrine to coastal flooding within the state. *Bohn v. Albertson* established long ago that, under California law, title to land is unchanged by an avulsive event.<sup>92</sup> Notably, the holding is limited to the question of title to the flooded property and the rights of the public in the navigable waters submerging the property, although the landowner’s right to reclaim land flooded through avulsion is discussed in dicta.<sup>93</sup> Despite the narrowness of the holding, *Bohn* does expressly state a right to reclaim and further implies that the landowner can, through reclamation, cut off public right to access or use the land within its boundaries.<sup>94</sup>

Importantly, the California Supreme Court has yet to tackle the applicability of the avulsion doctrine in any capacity. The only indication of how the highest court in the state might rule on the issue of coastal avulsion can be gleaned from a footnote to a water boundaries case.<sup>95</sup> Here, the court seemingly accepted the holding in *Bohn* that a landowner has the right to reclaim land lost to sudden flooding because title is not lost when an avulsive event occurs.<sup>96</sup> While this is insufficient to support a conclusion that the California Supreme Court would hold that avulsion is applicable to the coastline, it indicates that the court might endorse the application of the doctrine to hold that title does not change on account of an avulsive event.

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86. *Siesta Props.*, 122 So. 2d at 223–24.

87. *Davis*, 622 S.W.2d at 644.

88. *Id.* at 646.

89. FLUSHMAN, *supra* note 77, at 92.

90. *Id.*

91. *Davis*, 622 S.W.2d at 646.

92. 238 P.2d 128, 135–37 (Cal. Ct. App. 1951).

93. *Id.* at 132, 135–36.

94. *Id.* at 140–41.

95. *State v. Superior Court*, 625 P.2d 239, 251 n.18 (Cal. 1981).

96. *Id.*

A decision from the California Court of Appeal in *Beach Colony II v. California Coastal Commission* provides an example of the California judiciary's application of the avulsion doctrine to coastal property.<sup>97</sup> Here, the California Coastal Commission declared land constantly submerged by six inches of water<sup>98</sup> "wetland" because it fell within the statutory definition imposed by the California Coastal Act of 1976.<sup>99</sup> The categorization of Beach Colony's avulsed property as "wetlands" enabled the Commission to impose conditions on reclamation efforts.<sup>100</sup> The condition at issue in the case required Beach Colony to create new wetlands from its dry property in order to restore the avulsed property.<sup>101</sup> Holding that a property owner has a legal right to reclaim land lost to avulsion and remove water submerging the property, the court rejected the contested condition as an unreasonable restriction.<sup>102</sup> In doing so, the court prioritized common law property rights over statutory regulation by applying the doctrine of avulsion.<sup>103</sup> Thus, the emerging principle is that only reasonable restrictions can be imposed by the state when protected environmental areas are harmed by reclamation efforts in response to avulsion.<sup>104</sup>

Relevant to this Note, the court in *Beach Colony II* did not address whether this holding would extend to ocean-induced flooding or whether it is reserved to avulsive flooding related to rivers, as addressed by the case, where river redirection caused by overflow resulted in flooding.<sup>105</sup> The court also left untouched the question of whether the right to reclaim, by building sea walls, for example, applies to ocean-adjacent property or whether this right applies exclusively to coastal property lying inland from the shoreline. Nevertheless, the court's holding could have massive ramifications for sea-level rise response in California. The California Coastal Commission has jurisdiction over coastal lands extending inward one thousand yards from the mean high tide line.<sup>106</sup> So long as the doctrine of avulsion applies to ocean-induced flooding, precedent established by the holding in *Beach Colony II* could be applied throughout the state in favor of private property owners. The likely widespread nature of reclamation efforts in response to an increase in coastal flooding events renders this type of claim a potential hotbed of litigation between the State and coastal landowners.

More broadly, the above holdings, both from within and outside of California, call into question the usefulness of the avulsion doctrine and whether

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97. *Beach Colony II v. Cal. Coastal Comm'n*, 199 Cal. Rptr. 195, 197 (Ct. App. 1984).

98. *Id.* at 198–99.

99. *Id.* at 197.

100. *Id.*

101. *Id.*

102. *Id.* at 202–03.

103. *Id.* at 197.

104. *Id.*

105. *Id.* at 197–98.

106. CAL. PUB. RES. CODE § 30103 (West 2018).

it can serve as an effective framework for resolving sea-level rise disputes or only generate confusion regarding property rights. As discussed above, the California Court of Appeal's decision in *Beach Colony II* does not permit a conclusion that the avulsion doctrine broadly applies to coastal land in California. Overall, much uncertainty lingers regarding the fate of right to title claims through assertion of the doctrine. In light of case law from other states, particularly Texas's holding in *Davis*, an alternate approach may prove a more sensible way of upholding the primary goals of protecting landowner desires for water adjacency while assuring public access to the shoreline.<sup>107</sup>

Responsibility lies entirely with California's judiciary to meaningfully examine the usefulness of the accretion and avulsion doctrines and affirm a useful framework. The U.S. Supreme Court is unable to assess the wisdom of any given state's takings precedent regarding the applicability of avulsion.<sup>108</sup> Because takings law protects property rights as established by states, any opinion offered by the Supreme Court's review is merely a suggestion.<sup>109</sup> States must serve as the sole determinants of how they choose to apply takings law and related doctrines, including avulsion, as applicable to property rights.<sup>110</sup> The uncertainty regarding avulsion in California does little to provide either the State or property owners with any sense as to how their respective legal rights change following an objectively avulsive event affecting coastal property. Clarity will come only if litigants bring precise claims that courts tackle head-on to establish meaningful precedent.

#### IV. IMPLICATIONS FOR CLIMATE CHANGE LITIGATION

From the murkiness surrounding the current Fifth Amendment takings doctrine emerges the potential for groundbreaking climate change litigation claims. Tort liability may serve as a powerful avenue for litigating governmental failure to adequately address the coastal impacts of climate change,<sup>111</sup> but such a discussion lies outside of the purpose of this Note. What follows is a discussion of potential climate change litigation focusing on claims stemming out of the Takings Clause. There are two particularly intriguing theories for imposing

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107. See Joseph L. Sax, *The Accretion/Avulsion Puzzle: Its Past Revealed, Its Future Proposed*, 23 TUL. ENVTL. L.J. 305, 353–54 (2010) (“The legal situation could be greatly improved by a few straightforward changes. First and foremost, acknowledgment that maintaining water adjacency for riparian/littoral landowners and assuring public use of overlying water (and some part of the foreshore) are the central goals of the law relating to migratory waters, and title should therefore follow a moving water boundary without regard to the rate, perceptibility, or suddenness of the movement, subject to just a few exceptions . . . .” (footnotes omitted)).

108. See *Stop the Beach Renourishment, Inc. v. Fla. Dep't of Envtl. Prot.*, 560 U.S. 702, 732 (2010) (“Even if there might be different interpretations of *Martin* and other Florida property-law cases that would prevent this arguably odd result, we are not free to adopt them.”).

109. *Id.*

110. *Id.*

111. See Maxine Burkett, *Duty and Breach in an Era of Uncertainty: Local Government Liability for Failure to Adapt to Climate Change*, 20 GEO. MASON L. REV. 775, 775 (2013) (arguing for tort liability).

failure to act liability through the Takings Clause to address sea-level rise: passive takings and public trust stewardship.

#### A. PASSIVE TAKINGS

Passive takings claims might serve as a powerful means of addressing the State's failure to act to prevent severe hardship for landowners facing rising sea levels. Recent academic discussion has focused on passive takings as a means of litigating takings that occur as a result of ecological changes and not because of a state's failure to regulate.<sup>112</sup> The potential upside of permitting passive takings liability in the context of sea-level rise is striking. Because traditional takings claims only force the government to compensate private parties as a result of action, efficient regulation is discouraged as the state seeks to avoid exposure to liability.<sup>113</sup> Assuming that there is a failure to regulate, by incentivizing the government to take active steps to mitigate damages caused by sea-level rise, passive takings liability could counteract the threat of takings claims that act to prevent the government from appropriately regulating, resulting in more effective climate action.<sup>114</sup>

The possibility that coastal flooding resulting from a governmental omission might constitute a taking is bolstered by the Supreme Court's holding in *Arkansas Game & Fish Commission v. United States*, discussed above in Part II.<sup>115</sup> The Court held that a government-induced, temporary flooding could constitute a Fifth Amendment taking.<sup>116</sup> Two major unknowns emerge from the decision. First, the Court did not address whether this holding would apply to shoreline flooding in addition to river flooding. Second, and relevant to a passive takings claim, there is no discussion in the opinion as to whether government *inaction*, could constitute a taking in the context of flooding.

Takings law protects property rights as established by states, so although the Court's decision on the takings claim at issue in *Arkansas Game* is not binding on California courts, the rationale may prove convincing to a state court faced with a similar issue. The foreseeability of flooding as a result of government action was critical to the Court's decision, which raises the possibility that if flooding caused by inaction could be proven to be foreseeable, liability might be triggered. While this conclusion is speculative in the face of the Court's holding in *Arkansas Game*, the temporary nature of the flooding at issue and the government's causal role in the case certainly raises the possibility that liability for coastal flooding caused by inaction might be established. When combined with the public policy argument that passive takings liability incentivizes governmental action to mitigate sea-level rise risk, the Court's

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112. Christopher Serkin, *Passive Takings: The State's Affirmative Duty to Protect Property*, 113 MICH. L. REV. 345, 353 (2014).

113. *Id.* at 361.

114. *Id.* at 404.

115. *Ark. Game & Fish Comm'n v. United States*, 568 U.S. 23, 38 (2012).

116. *Id.* at 39.

rationale in *Arkansas Game* may be enough to form a successful takings claim under the right set of coastal flooding circumstances, thereby establishing critical precedent for future claims.

#### B. FAILURE OF PUBLIC TRUST STEWARDSHIP

The State's failure to serve as a steward of the public trust might also serve as an avenue for establishing failure to act liability. Two specific public trust doctrine cases establish separate theories under which liability for the State's failure to address sea-level rise through regulation might be imposed. In *Illinois Central Railroad Company v. Illinois*, the Supreme Court held that, under the public trust doctrine, Chicago lacked the power to convey waterfront land to a private company.<sup>117</sup> In doing so, the Court characterized the public trust doctrine as imposing a duty on the government to serve as the trustee responsible for managing public trust resources.<sup>118</sup> Under this conception of the doctrine, the government has a substantive legal duty, as the trustee for public trust resources, to affirmatively preserve tidal lands. A failure to act claim could therefore conceivably be premised on the state's failure to affirmatively preserve tidal lands to mitigate the consequences of sea-level rise.

A second theory under which failure to act liability might be imposed through the public trust doctrine emerges out of *National Audubon Society v. Superior Court*.<sup>119</sup> Here, the California Supreme Court characterized the public trust doctrine as creating an affirmative duty of diligence in considering potential adverse impacts to public trust resources prior to acting.<sup>120</sup> However, despite having an affirmative duty to consider adverse impacts, the state is not required to achieve any particular degree of protection.<sup>121</sup> The court narrowly construed the doctrine by mandating only that the government utilize diligence in decision making and preserve the uses protected by the trust when feasible and "so far as consistent with the public interest."<sup>122</sup> Therefore, although *National Audubon* imposes an affirmative duty on government to protect public resources, it provides no particular rule for how the state should balance protection of trust resources with other interests at stake. Ultimately, this interpretation of the public trust doctrine provides the government with a great deal of discretion. Despite this, room for a failure to act claim could emerge in instances where it could be established that the government failed, by any reasonable account, to affirmatively protect the tidelands as a public trust resource.

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117. Ill. Cent. R.R. Co. v. Illinois, 146 U.S. 387, 464 (1892).

118. *Id.* at 452–54.

119. Nat'l Audubon Soc'y v. Superior Court, 658 P.2d 709, 724, 727 (Cal. 1983).

120. *Id.* at 727–28.

121. *Id.*

122. *Id.* at 728.

## CONCLUSION

California must critically examine current Takings Clause jurisprudence to establish a regulatory framework capable of resolving the property disputes that are bound to arise as a result of accelerating sea-level rise. Unprecedented challenges to coastal regulation and related property rights are inevitable as the effects of both short-term and long-term sea-level rise take a toll on coastal development and infrastructure.<sup>123</sup>

Weaknesses in the current understanding of the takings doctrine, as underscored by an examination of the background principles exception, the public trust doctrine, and the avulsion doctrine, necessitate the California judiciary's willingness to reconsider the utility of certain existing Takings Clause jurisprudence. The effectiveness of the current method for determining the mean high tide line to serve as a legal boundary will be tested by sea-level rise. Both the State and private parties would gain enhanced predictability and security regarding their respective property rights with modification to the current method. Uncertainty surrounding the applicability and usefulness of the avulsion doctrine to the California coast also mandates enhanced clarity if property rights are to be fully comprehended by the relevant parties. Addressing these weaknesses in the current understanding of California's takings doctrine would enable productive management of the coast as sea-level rise begins to impact the shoreline in unprecedented ways.<sup>124</sup>

Legal challenges posed by sea-level rise must be tackled head-on. With sea-level rise will come a bevy of innovative and challenging legal opportunities. Emerging from an examination of current takings law and its related doctrines is the potential for profoundly impactful passive takings claims and potential failure of public trust stewardship claims. Claimants must assert strong arguments that exploit the weaknesses of existing doctrines. Responsibility then lies with the courts to provide useful guidance and workable standards. Only then will state and private actors have a sense of predictability as to the impact that sea-level rise will have on their respective interests.

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123. RISING SEAS IN CALIFORNIA, *supra* note 3, at 17; *see also* Byrne, *supra* note 4, at 69.

124. RISING SEAS IN CALIFORNIA, *supra* note 3, at 3.

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