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# THE M/V *COSCO BUSAN* OIL SPILL: TURNING THE TIDE—A MODEL OF SUCCESSFUL COLLABORATION

IGNACIA S. MORENO\* & BRADLEY R. O'BRIEN\*\*

## I. INTRODUCTION

At approximately 8:30 a.m. on November 7, 2007, the 902-foot container ship *M/V Cosco Busan* struck the base of the San Francisco-Oakland Bay Bridge as the ship attempted to depart San Francisco Bay.<sup>1</sup> That November morning, the San Francisco Bay became the scene of an unprecedented local disaster. No vessel had ever crashed into the Bay Bridge in its seventy-year history. The allision<sup>2</sup> carved a gash in the hull of the *Cosco Busan*, causing it to spill approximately 53,000 gallons of bunker oil into the San Francisco Bay (“the Oil Spill”).<sup>3</sup>

The Oil Spill primarily impacted the central portion of the San Francisco Bay’s waters and shoreline, although wind and currents carried oil

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<sup>1</sup> COSCO BUSAN OIL SPILL TRS., COSCO BUSAN OIL SPILL FINAL DAMAGE ASSESSMENT AND RESTORATION PLAN/ENVIRONMENTAL ASSESSMENT 14 (2012), available at [http://www.fws.gov/contaminants/Restorationplans/CoscoBusan/Cosco\\_Settlement/FinalCoscoBusanDARP.pdf](http://www.fws.gov/contaminants/Restorationplans/CoscoBusan/Cosco_Settlement/FinalCoscoBusanDARP.pdf) [hereinafter COSCO BUSAN OIL SPILL TRS.]. The *Cosco Busan* Oil Spill Trustees creating this report were the California Department of Fish and Game, the California State Lands Commission, the National Oceanic and Atmospheric Administration, the U.S. Fish and Wildlife Service, the National Park Service, and the Bureau of Land Management. See *id.* at 32; see also *infra* Part IV.

<sup>2</sup> An “allision” occurs when a vessel strikes a fixed object such as the Bay Bridge. In contrast, a “collision” occurs when two “running” vessels strike each other.

<sup>3</sup> COSCO BUSAN OIL SPILL TRS., *supra* note 1.

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outside of the Bay to the outer coast. Among other impacts, the Oil Spill injured birds, mammals, fish, shoreline habitats, and eelgrass beds.<sup>4</sup> The Oil Spill precipitated widespread beach closures, fishery closures, and the impairment and cancellation of other recreational activities.

Federal, state, and local governments responded swiftly and decisively to contain the Oil Spill, minimize the impact on San Francisco Bay and coastal resources, and evaluate the corresponding injuries to those resources. Within weeks of the Oil Spill, on November 30, 2007, the United States filed a civil action<sup>5</sup> asserting natural-resource damage and other claims against the vessel owner, Regal Stone Limited (“Regal Stone”); the vessel operator, Fleet Management Limited (“Fleet Management”) (together, the “vessel interests”); and the ship’s pilot, Captain John Cota (collectively “responsible parties”).<sup>6</sup> On September 19, 2011, the United States and the State of California announced a comprehensive settlement with the responsible parties.<sup>7</sup> The settlement required Regal Stone and Fleet Management to pay \$44.4 million to the federal and local government parties.<sup>8</sup> In conjunction with other paid costs, the settlement reimbursed the United States, the State of California, and local governments for their response and assessment costs. In addition, this settlement funded projects to compensate for the natural resources injured and recreational uses lost by the Oil Spill.<sup>9</sup>

There are numerous federal<sup>10</sup> and state<sup>11</sup> statutes that allow for the recovery of natural-resource damages and other relief in the event of an

<sup>4</sup> *Id.* at 15-16.

<sup>5</sup> Due to applicable protections and privileges, this Article relies upon publicly available information.

<sup>6</sup> The United States brought its action in the United States District Court for the Northern District of California. *See* Complaint, United States v. Shipowners’ Ins. & Guar. Co., No. 3:07-cv-06045 (N.D. Cal. Nov. 30, 2007); Amended Complaint, *id.*, No. 3:07-cv-06045 (N.D. Cal. Mar. 26, 2008). The United States also criminally prosecuted Captain Cota and Fleet Management. *See* Plea Agreement as to John Joseph Cota, United States v. Cota, No. 3:08-cr-00160 (N.D. Cal. Mar. 6, 2009); Plea Agreement as to Fleet Management Limited, *id.*, No. 3:08-cr-00160, (N.D. Cal. Aug. 13, 2009). The State of California and municipalities also filed actions asserting civil statutory and common-law claims in state court. *See, e.g.*, California v. Regal Stone Ltd., No. CGC-09-483865, Complaint (Cal. Super. Ct. S.F. Cnty. Jan. 7, 2009). This Article does not focus on the admiralty claims or the criminal claims that were brought by the United States, nor does it focus on claims brought by the State of California or local governments.

<sup>7</sup> Notice of Lodging Consent Decree, United States v. Shipowners’ Ins. & Guar. Co., No. 3:07-cv-06045 (N.D. Cal. Sept. 19, 2011); Order to Enter Consent Decree, *id.*, No. 3:07-cv-06045 (N.D. Cal. Jan. 7, 2012).

<sup>8</sup> Notice of Lodging Consent Decree, *supra* note 7; Order to Enter Consent Decree, *supra* note 7.

<sup>9</sup> Of the approximately \$44.5 million settlement, \$37 million addresses injuries to natural resources, and the remainder reimburses the federal, state, and local governments.

<sup>10</sup> Federal statutes that address oil spills that were relied upon in the Cosco Busan litigation include the Oil Pollution Act of 1990, Pub. L. No 101-380, 101 Stat. 484; *see* 33 U.S.C.S. § 2702(b)(1)(B), (2)(A) (LEXIS 2014); the National Marine Sanctuaries Act, 16 U.S.C.S. § 1431 et

oil spill. This Article provides a practical overview of the federal laws that were utilized in the aftermath of the Oil Spill; discusses the natural-resource injury and damage evaluation; and describes how the settlement funded projects that restore, rehabilitate, or replace natural resources injured, destroyed, or lost as a result of the Oil Spill.

As few natural-resource damages claims have been actively litigated, the Oil Spill presented unique challenges as litigation was conducted in parallel to the regulatory process that evaluates natural-resource injuries and damages under the Oil Pollution Act.<sup>12</sup> Notwithstanding the litigation,<sup>13</sup> a complex relationship between the Oil Spill Trustees and the vessel interests evolved into jointly coordinated studies, data evaluations, and productive debates over the technical bases of the Trustees' claims.<sup>14</sup> Their efforts resulted in a settlement that required Regal Stone and Fleet Management to fund restoration and recreation projects enumerated in the Trustees' Draft Assessment and Restoration Plan ("DARP"). The DARP and its process are described in Part VIII of this Article. The litigation defined the statutory bases for the damages sought by the United States. However, this Article does not discuss the litigation in detail, focusing instead on the Trustees' natural resource damages methodologies. Specifically, it explores how the Trustees evalu-

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seq. (LEXIS 2014); *see* 16 U.S.C.S. § 1443 (LEXIS 2014); the Park System Resources Protection Act, 16 U.S.C.S. § 19jj et seq. (LEXIS 2014); *see* 16 U.S.C.S. § 19jj-1 (LEXIS 2014); and the Clean Water Act, 33 U.S.C.S. § 1251 et seq. (LEXIS 2014); *see* 33 U.S.C.S. § 1321 (LEXIS 2014). Examples of other federal statutes that relate to oil spills include the Endangered Species Act, 16 U.S.C.S. § 1531 et seq. (LEXIS 2014); the Rivers and Harbors Appropriation Act of 1899, 33 U.S.C.S. § 403 et seq. (LEXIS 2014); the Coastal Zone Management Act, 16 U.S.C.S. § 1451 et seq. (LEXIS 2014); the Magnuson Stevens Fishery Conservation and Management Act, 16 U.S.C.S. § 1801 et seq. (LEXIS 2014); the Marine Mammal Protection Act, 16 U.S.C.S. § 1361 et seq. (LEXIS 2014); the Migratory Bird Treaty Act of 1918, 16 U.S.C.S. § 703 et seq. (LEXIS 2014); and the Wilderness Act of 1964, 16 U.S.C.S. §§ 1131–1136 (LEXIS 2014). Although the Comprehensive Environment, Response, Compensation, and Liability Act ("CERCLA") allows for the recovery of natural-resource damages, it does not generally apply to the recovery of natural-resource damages resulting from an oil spill. *See* 42 U.S.C.S. § 9607(a)(4)(C) (LEXIS 2014) (scope of CERCLA liability for natural-resource damages); *id.* § 9601(14) (exclusion for releases of "petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance").

<sup>11</sup> California statutes that apply to natural-resource damage claims are the California Lempert-Keene-Seastrand Oil Spill Prevention and Response Act, CAL. GOV'T CODE §§ 8574.1 et seq., 8670.1 et seq., 8750 et seq. (LEXIS 2014); the California Environmental Quality Act, CAL. PUB. RES. CODE § 21000 et seq. (LEXIS 2014); the California Coastal Act of 1976, CAL. PUB. RES. CODE § 30000 et seq. (LEXIS 2014); the California Endangered Species Act, CAL. FISH & GAME CODE § 2050 et seq. (LEXIS 2014); and CAL. PUB. RES. CODE § 6001 et seq. (LEXIS 2014).

<sup>12</sup> 33 U.S.C.S. § 2701 et seq. (LEXIS 2014).

<sup>13</sup> For example, Regal Stone and Fleet Management unsuccessfully moved to dismiss the United States' claims as not meeting the presentment requirements of the Oil Pollution Act, 33 U.S.C.S. § 2713 (LEXIS 2014). *See* United States v. M/V Cosco Busan, 557 F. Supp. 2d 1058 (N.D. Cal. 2008).

<sup>14</sup> The federal and state Trustees are identified and discussed in Part IV of this Article.

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ated the extent of natural-resource injuries and damages caused by the Oil Spill, and how the settlement funds were used for restoration and recreation projects to compensate for the damages caused by the Oil Spill.

Further, this Article discusses how the United States, the State of California, local governments, and local citizens joined forces in response to the Oil Spill; how the responsible parties worked with the federal and state governments; and how their joint efforts and collaboration serve as a model for a restoration framework that “turned back the tide” to restore the precious resources of the San Francisco Bay area.

## II. THE COSCO BUSAN OIL SPILL

### A. THE SAN FRANCISCO BAY ESTUARY

The San Francisco Bay is the largest estuary on the Pacific Coast of North America and is one of the State of California’s most important ecological habitats for wildlife.<sup>15</sup> It is also a recreational resource for millions of residents and visitors. The Bay shoreline and the outer coast provide critical habitat for many species of plants and animals, including millions of migrating waterfowl.<sup>16</sup>

The San Francisco Bay Area “contains a wide range of coastal habitats including sandy beaches and rocky intertidal areas, open ocean, protected bays, harbors and jetties, offshore rocks, tidal flats, and wetlands.”<sup>17</sup> The Bay is important to migratory waterfowl and shorebirds,<sup>18</sup> and it serves as a shelter to approximately one million waterbirds<sup>19</sup> each winter.<sup>20</sup> Migrating species that pass through the Bay include “at least 36 species of marine mammals, 94 species of seabirds and waterbirds, 400 species of fish, 4 species of sea turtles, 31 phyla of invertebrates, and over 500 species of marine algae.”<sup>21</sup> Other marine spe-

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<sup>15</sup> COSCO BUSAN OIL SPILL TRS., *supra* note 1, at 112.

<sup>16</sup> *Id. passim*.

<sup>17</sup> *Id.* at 22.

<sup>18</sup> *Id.* at 26 (“San Francisco Bay is considered a site of Hemispheric Importance by the Western Hemisphere Shorebird Reserve Network and is one of the most important sites for wintering diving ducks on the Pacific Flyway.”).

<sup>19</sup> *Id.* (“The American Bird Conservancy recognized Point Reyes as one of 100 Globally Important Bird Areas . . . in the world for bird diversity.”).

<sup>20</sup> *Id.* (“Bollinas Lagoon and Tomales Bay are designated as Wetlands of International Importance under the United Nations Educational, Scientific, and Cultural Organization’s Convention on Wetlands . . . because of their significance to migratory waterfowl and shorebirds.”).

<sup>21</sup> *Id.* at 23 (“Approximately 400 species of fish are found within the [Bay Area]. . . . This habitat includes many commercially important fishes such as the . . . Northern Anchovy, Pacific Herring . . . and Petrale Sole . . .”).

cies include “the Sea Otter, Gray Whale, Blue Whale, Humpback Whale, Market Squid, Brown Pelican, California Coho Salmon, rockfish, commercial sea urchin, and Giant Kelp.”<sup>22</sup> There are numerous national parks, sanctuaries, and other attractions used by the public for a wide variety of recreational uses.

#### B. THE EVENTS OF NOVEMBER 7, 2007

Due to the complexity of navigating within the Bay, vessels such as the *Cosco Busan* must be manned by a local “compulsory” pilot, who is responsible for guiding the vessel through the Bay to an offshore pilot station where authority is transferred back to the vessel’s permanent master. In accordance with this requirement, on November 7, 2007, Captain Cota boarded the *Cosco Busan* at the Port of Oakland in preparation for piloting the *Cosco Busan* through San Francisco Bay waters to the offshore pilot station. There, Captain Cota was to disembark the *Cosco Busan* and the vessel was to continue directly to a foreign port of call.<sup>23</sup>

At approximately 8:30 a.m. and in dense fog, the 902-foot container ship struck the Delta tower of the Bay Bridge as it attempted to depart San Francisco Bay.<sup>24</sup> The allision “created a 212-foot long by 10-foot high by 8-foot deep gash” in the side of the vessel that breached the port fuel and ballast tanks.<sup>25</sup> As a result, approximately 53,000 gallons of bunker oil spilled into the Bay.<sup>26</sup>

#### C. THE NTSB FINDINGS ON FACTORS THAT CAUSED THE OIL SPILL

The National Transportation Safety Board (“NTSB”) concluded in the *Cosco Busan* Accident Report (“NTSB Accident Report”), in part,

that the probable cause of the allision of the *Cosco Busan* with the San Francisco–Oakland Bay Bridge was the failure to safely navigate the vessel in restricted visibility as a result of (1) the pilot’s degraded cognitive performance from his use of impairing prescription medications, (2) the absence of a comprehensive pre-departure master/pilot exchange and a lack of effective communication between the pilot and

<sup>22</sup> *Id.*

<sup>23</sup> See NAT’L TRANSP. SAFETY BD., ALLISION OF THE HONG KONG-REGISTERED CONTAINER-SHIP M/V COSCO BUSAN WITH THE DELTA TOWER OF THE SAN FRANCISCO–OAKLAND BAY BRIDGE, SAN FRANCISCO, CALIFORNIA, NOVEMBER 7, 2007, at 1 (2009), available at <http://www.nts.gov/investigations/AccidentReports/Reports/MAR0901.pdf>.

<sup>24</sup> *Id.* at 1.

<sup>25</sup> *Id.*

<sup>26</sup> *Id.*

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the master during the accident voyage, and (3) the master's ineffective oversight of the pilot's performance and the vessel's progress.<sup>27</sup>

The NTSB Accident Report also made recommendations to Fleet Management, the American Pilots' Association, and the United States Coast Guard to ensure that future incidents are avoided.

D. SUMMARY OF RESOURCES IMPACTED BY THE OIL SPILL

The Oil Spill spread throughout the central San Francisco Bay. The wind and currents quickly took some of the oil outside of the Bay, impacting the outer coast from Point Reyes to the north and Half Moon Bay to the south. The Oil Spill had a major impact on the San Francisco Bay and beyond, oiling over 100 miles of shoreline habitat.<sup>28</sup>

The Oil Spill impacted "birds; mammals; fish; shoreline habitats (including rocky intertidal, salt marsh, flats, sandy beach habitat); eel-grass beds; and human recreational uses."<sup>29</sup> The Oil Spill killed approximately 6,849 birds, resulted in the loss of a significant portion of the 2007–2008 herring spawn, and impacted 3,367 acres of shoreline habitat.<sup>30</sup> It precipitated the closure of Bay and area beaches to recreation and fishing and affected numerous national parks and sanctuaries and other public attractions. The result was a loss of 1,079,900 human recreational user-days across a wide variety of activities.<sup>31</sup>

E. THE MULTI-FACETED GOVERNMENTAL RESPONSE

A large-scale response ensued, with cleanup crews active for several weeks. The response was organized through a Unified Command, which consisted of federal and state agencies and the vessel interests.<sup>32</sup> As a result, nearly 23,000 gallons of oil were recovered.<sup>33</sup> After further monitoring and other activities, the United States Coast Guard declared the response to be complete on November 9, 2008. As discussed below, the United States, the State of California, and local governments looked to existing legal mechanisms to hold those responsible for the Oil Spill accountable to the fullest extent of the law. Specifically, those governments sought to recover response and assessment costs; recover damages for

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<sup>27</sup> *Id.* at xi, 135-36.

<sup>28</sup> COSCO BUSAN OIL SPILL TRS., *supra* note 1, at 112.

<sup>29</sup> *Id.* at 15.

<sup>30</sup> *Id.* at 15-16.

<sup>31</sup> *Id.* at 16.

<sup>32</sup> *Id.* at Exec. Summary.

<sup>33</sup> *Id.* at 14.

the injury, destruction, and loss of natural resources; recover damages for loss of recreational uses; and ensure necessary restoration or replacement of impacted resources.

### III. CERTAIN STATUTES AUTHORIZE NATURAL-RESOURCE DAMAGES AND OTHER RELIEF

There are several federal statutes that allow for the recovery of natural-resource damages and other relief in the event of an oil spill. Although the scope of the potential relief is statute-specific, there are typically four types of claims that can be made against parties responsible for an oil spill: (1) claims for reimbursement of response costs; (2) natural-resource and assessment costs; (3) fines and penalties; and (4) third-party claims, including claims by marinas and commercial fisheries. This Part of the Article summarizes the statutory causes of action that were primarily relied upon by the United States in the *Cosco Busan* litigation.<sup>34</sup>

#### A. THE OIL POLLUTION ACT

Under the Oil Pollution Act (“OPA”),<sup>35</sup> recovery generally includes “[d]amages for injury to, destruction of, loss of, or loss of use of, natural resources” arising from an oil spill to waters of the United States.<sup>36</sup> Responsible parties are strictly liable for all removal costs and damages resulting from the injury to, destruction of, loss of, or loss of use of natural resources, including the reasonable costs of assessing the damages.<sup>37</sup>

#### B. THE PARK SYSTEM RESOURCES PROTECTION ACT

Under the Park System Resources Protection Act (“PSRPA”), any person who destroys, causes the loss of, or injures park system resources is liable for response costs and damages resulting from such destruction,

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<sup>34</sup> The United States also criminally prosecuted Captain Cota and Fleet Management. Captain Cota pleaded guilty in 2009 and was sentenced to ten months in prison for negligently causing the discharge of oil and killing migratory birds). See Plea Agreement as to John Joseph Cota, United States v. Cota, No. 3:08-cr-00160 (N.D. Cal. Mar. 6, 2009). After Captain Cota pleaded guilty, Fleet Management was ordered to pay \$10 million in criminal penalties—including \$2 million for local environmental projects—for its role in negligently causing the Cosco Busan Oil Spill and obstruction of justice. See Plea Agreement as to Fleet Management Limited, United States v. Cota, No. 3:08-cr-00160 (N.D. Cal. Aug. 13, 2009).

<sup>35</sup> 33 U.S.C.S. § 2701 et seq. (LEXIS 2014).

<sup>36</sup> *Id.* § 2702(b).

<sup>37</sup> *Id.* § 2702.



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loss, or injury.<sup>38</sup> Park system resources are defined as “any living or non-living resource that is located within the boundaries of a unit of the National Park System.”<sup>39</sup> Vessels are also liable in rem.<sup>40</sup>

C. THE NATIONAL MARINE SANCTUARIES ACT

Under the National Marine Sanctuaries Act (“NMSA”),<sup>41</sup> any person who destroys, causes the loss of, or injures any sanctuary resource is liable to the United States for response costs and damages resulting from such destruction, loss, or injury.<sup>42</sup> Vessels are also liable in rem<sup>43</sup> and subject to forfeiture.<sup>44</sup>

D. THE CLEAN WATER ACT

Under the Clean Water Act (“CWA”),<sup>45</sup> the United States can seek civil penalties against “[a]ny person who is the owner, operator, or person in charge of any vessel” that discharged oil into the navigable waters of the United States in such quantities as may be harmful.<sup>46</sup>

IV. THE TRUSTEES’ RESPONSE TO THE OIL SPILL AND THE NATURAL-RESOURCE DAMAGE ASSESSMENT PROCESS

The OPA Natural Resource Damage Assessment (“NRDA”) regulations “provide the Trustees with guidelines on processes and methodologies for carrying out an NRDA.”<sup>47</sup> Four trustees, two federal and two state, were designated to act on behalf of the public in the NRDA process.<sup>48</sup> The designated Trustee agencies responsible for the Oil Spill response are the Department of the Interior, the National Oceanic and Atmospheric Administration,<sup>49</sup> the California Department of Fish and

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<sup>38</sup> 16 U.S.C.S. § 1911 et seq. (LEXIS 2014).

<sup>39</sup> *Id.* § 1911(d).

<sup>40</sup> *Id.* § 1911-1(b).

<sup>41</sup> *Id.* § 1431 et seq.

<sup>42</sup> *See id.* §§ 1436-1437.

<sup>43</sup> *Id.* § 1437(d)(3).

<sup>44</sup> *Id.* § 1437(e)(1).

<sup>45</sup> 33 U.S.C.S. § 1251 et seq. (LEXIS 2014).

<sup>46</sup> *Id.* §§ 1321(b)(3), (b)(7).

<sup>47</sup> COSCO BUSAN OIL SPILL TRS., *supra* note 1, at 35; *see* 15 C.F.R. § 990 et seq. (LEXIS 2014).

<sup>48</sup> *Id.* § 2706(b).

<sup>49</sup> 40 C.F.R. § 300.600 et seq. (LEXIS 2014); Exec. Order No. 12580, 52 Fed. Reg. 2923 (Jan. 23, 1987), as amended by Exec. Order No. 12777, 56 Fed. Reg. 54757 (Oct. 18, 1991).

Game<sup>50</sup> (“CDFG”),<sup>51</sup> and the California State Lands Commission.<sup>52</sup> Local government plaintiffs asserted standing to recover for loss of use and enjoyment of natural and public resources under the State of California Lempert-Keene-Seastrand Oil Spill Prevention and Response Act.<sup>53</sup>

OPA regulations provide that if an oil spill affects multiple Trustee interests, the Trustees should act jointly to ensure that full restoration is achieved.<sup>54</sup> Consistent with that mandate, the Trustees worked collaboratively to fully assess the nature and extent of injuries to natural resources and to evaluate and implement appropriate actions to restore the injured resources.<sup>55</sup>

“At the beginning of the NRDA, the Trustees jointly designated CDFG as the Lead Administrative Trustee . . . .”<sup>56</sup> In addition to coordinating their own actions, the Trustees coordinated NRDA activities with other affected entities, including the City and County of San Francisco, the City of Richmond, the City of Oakland, the East Bay Regional Parks District, and other local municipalities such as Alameda County, Contra Costa County, Marin County, and San Mateo County.<sup>57</sup>

The OPA NRDA regulations provide the Trustees guidelines for conducting assessments cooperatively with responsible parties.<sup>58</sup> Whether these specific regulations are followed is left to the Trustees’ discretion, but OPA provides that if the Trustees conduct the NRDA in accordance with the regulations, their “determination or assessment of damages to natural resources . . . shall have the force and effect of a rebuttable presumption . . . in any administrative or judicial proceeding.”<sup>59</sup>

Consistent with the regulations, the Trustees invited the responsible parties to participate in the NRDA. Regal Stone and Fleet Management

<sup>50</sup> CDFG was renamed the California Department of Fish and Wildlife on January 1, 2013. See CAL. FISH & GAME CODE § 700(b) (LEXIS 2015).

<sup>51</sup> The State Trustees were named pursuant to Oil Pollution Act, 33 U.S.C.S. § 2706 (LEXIS 2014); National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. §§ 300.600-300.615 (LEXIS 2014); Comprehensive Env’tl Response, Compensation and Liability Act, Pub. L. No. 96-510, 94 Stat. 2767 (1980); CAL. HEALTH & SAFETY CODE § 25352(c) (LEXIS 2014); CAL. FISH & GAME CODE §§ 711.7, 1802 (LEXIS 2014); Lempert-Keene-Seastrand Oil Spill Prevention and Response Act, CAL. GOV’T. CODE §§ 8574.1 et seq., 8670.1 et seq., 8750 et seq. (LEXIS 2014).

<sup>52</sup> CAL. PUB. RES. CODE §§ 6216, 6301 (LEXIS 2014).

<sup>53</sup> See CAL. GOV’T CODE §§ 8574.1 et seq., 8670.1 et seq., 8750 et seq. (LEXIS 2014).

<sup>54</sup> See 15 C.F.R. § 990.14(a)(1) (LEXIS 2014).

<sup>55</sup> See, e.g., 15 C.F.R. §§ 990.51-990.52 (LEXIS 2014).

<sup>56</sup> COSCO BUSAN OIL SPILL TRS., *supra* note 1, at 32.

<sup>57</sup> See *id.*

<sup>58</sup> See, e.g., 15 C.F.R. § 990.14(b), (c)(1) (LEXIS 2014); 15 C.F.R. §§ 990.41-990.45 (LEXIS 2014).

<sup>59</sup> See, e.g., 33 U.S.C.S. § 2706(e)(2) (LEXIS 2014); 15 C.F.R. §§ 990.11, 990.13 (LEXIS 2014).

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accepted.<sup>60</sup> Thereafter, a largely cooperative assessment process was established, in which, to the extent appropriate, the Trustees and vessel interests' representatives "coordinate[d] studies and other technical activities in the injury determination and quantification stages of the assessment."<sup>61</sup> This collaborative effort formed the foundation for the discussions that resulted in the settlement.

Biologists, economists, toxicologists, and other specialists representing the Trustees formed technical working groups that included [the vessel interests'] specialists and cooperatively developed work plans that were used to guide injury assessment activities. The parties then cooperatively designed and executed various injury studies and gathered, shared, and analyzed data and other information regarding injuries to various species and habitats and loss of use and enjoyment of natural resources by the public.

These technical specialists also gathered and discussed information regarding potential actions [(e.g., projects)] that would restore injured species and habitats and compensate the public.<sup>62</sup>

Public review and comment are integral to the restoration planning and project selection process.<sup>63</sup> Throughout the NRDA process, the Trustees made information available to the public. The Trustees held public meetings in Oakland and Mill Valley shortly after the Oil Spill and then created a website and a series of fact sheets to inform the public about the NRDA.<sup>64</sup> The Trustees published a Notice of Intent to Conduct Restoration Planning and concurrently opened an Administrative Record.<sup>65</sup> The Administrative Record included documents relied upon or considered by the Trustees during the assessment and restoration planning process.<sup>66</sup>

## V. THE OIL SPILL LITIGATION

On November 30, 2007, just weeks after the Oil Spill, the United States filed a complaint in the U.S. District Court for the Northern District of California, asserting claims against the *Cosco Busan*, in rem,

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<sup>60</sup> See *COSCO BUSAN OIL SPILL TRS.*, *supra* note 1, at 33.

<sup>61</sup> *Id.*

<sup>62</sup> *Id.*

<sup>63</sup> See 33 U.S.C.S. § 2706(c)(5) (LEXIS 2014).

<sup>64</sup> *COSCO BUSAN OIL SPILL TRS.*, *supra* note 1, at 33.

<sup>65</sup> See 15 C.F.R. §§ 990.44-990.45 (LEXIS 2014).

<sup>66</sup> See 15 C.F.R. § 990.45 (LEXIS 2014).

under NMSA and PSRPA.<sup>67</sup> The complaint also asserted claims against Regal Stone, Fleet Management, and Captain Cota under selected provisions of NMSA, PSRPA, OPA, and CWA.<sup>68</sup> Regal Stone and Fleet Management subsequently filed third-party actions.<sup>69</sup>

Local Bay Area governments and the State of California subsequently filed civil actions and coordinated with the United States to seek resolution of the civil claims. On December 10, 2007, San Francisco, Oakland, and Richmond filed an action in the Superior Court of the State of California against various parties related to the Oil Spill, seeking damages and injunctive relief under state law and under common-law theories included negligence, nuisance, trespass, unjust enrichment, and unfair business practices.<sup>70</sup> San Francisco and Richmond later filed an action in federal court, where the action was related to the federal case for the purpose of settlement.<sup>71</sup>

On January 7, 2009, the State of California filed its own complaint in the Superior Court of the State of California that included causes of action for natural-resource damages and civil liabilities pursuant to various state provisions and common-law theories of negligence.<sup>72</sup> The State's action was removed to federal court on April 3, 2009, and was later joined to the federal case for settlement in 2012.<sup>73</sup>

## VI. THE COSCO BUSAN OIL SPILL CIVIL SETTLEMENT

Notwithstanding the complex litigation, which included various venues and numerous parties, a global resolution to the natural-resource

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<sup>67</sup> Verified Complaint of the United States, *United States v. M/V Cosco Busan*, 557 F. Supp. 2d 1058 (N.D. Cal. Nov. 18, 2007) (No. 07-6045), 2007 WL 4253133.

<sup>68</sup> *Id.*

<sup>69</sup> Answer to Complaint, Affirmative Defenses, Counterclaim and Third Party Complaint of Defendants Regal Stone, Ltd. and Fleet Management Ltd., *United States v. M/V Cosco Busan*, 557 F. Supp. 2d 1058 (N.D. Cal. June 5, 2008) (No. 07-6045), 2008 WL 2472850; Amended Third Party Complaint Against State of California and Charles Calza, M.D., *United States v. M/V Cosco Busan*, 557 F. Supp. 2d 1058 (N.D. Cal. Sept. 12, 2008) (No. 07-6045), 2008 WL 4360681.

<sup>70</sup> Complaint, *City & Cnty. of S.F. v. Regal Stone, Ltd.*, No. CGC-07-469876 (Cal. Super. Ct. S.F. Cnty. Dec. 10, 2007); First Amended Complaint, *id.* (Feb. 8, 2008). The action was later transferred to Monterey County, where it received a new case number, M98173. Order to Transfer Case to Monterey County, *id.*, (Mar. 2, 2009).

<sup>71</sup> Complaint, *City & Cnty. of S.F. v. Regal Stone, Ltd.*, No. CV 12-0115 (DMR) (N.D. Cal. Jan. 6, 2012); Order Relating and Consolidating for Settlement Purposes Case Nos. C 07-6045 (SC), C 09-01469 (SC), and CV 12-0115 (DMR), *United States v. M/V Cosco Busan*, 557 F. Supp.2d 1058 (N.D. Cal. Jan. 24, 2012).

<sup>72</sup> Complaint, *People v. Regal Stone Ltd.*, No. CGC-09-483865 (Cal. Super. Ct. S.F. Cnty. Jan. 7, 2009).

<sup>73</sup> Notice of Removal of Civil Action to Federal Court, *People v. Regal Stone Ltd.*, No. 3:09-cv-09-01469 (N.D. Cal., Apr. 3, 2009); Joinder of California State Parties in United States' Memorandum of Law and Motion to Enter Consent Decree, *id.* (Jan. 27, 2012).

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damage claim was reached and embodied in a consent decree entered by the District Court for the Northern District of California on January 27, 2012.<sup>74</sup> Parties to the consent decree were the government plaintiffs, the United States, the State of California, and the cities of San Francisco and Richmond; the responsible parties defendants; and third parties.<sup>75</sup>

The Oil Spill settlement required the payment of \$44.4 million that, in conjunction with otherwise paid costs, reimbursed the governmental plaintiffs for their response and assessment costs.<sup>76</sup> The settlement funded projects that fully compensate for the natural resources injured by the Oil Spill and the lost human recreational uses.<sup>77</sup>

## VII. THE NUTS AND BOLTS OF THE NRDA

The Oil Spill was one of the few instances in which natural-resources damages claims were successfully resolved against the backdrop of active litigation. The litigation dynamic did not impact the Trustees' regulatory NRDA processes, but it created a multi-faceted relationship among the Trustees, Regal Stone, and Fleet Management. Notwithstanding the litigation, the Trustees and the vessel interests appropriately coordinated NRDA studies and analyses. The NRDA process resulted in a settlement that funded projects to restore the injured natural resources and lost recreational opportunities resulting from the Oil Spill. The remainder of this Article focuses on the methodology employed by the Trustees to determine the scope of the Oil Spill injuries and damages, and the settlement funding allocation among restoration and recreation projects.

### A. IDENTIFYING NATURAL RESOURCES INJURED BY THE OIL SPILL

The goal of an NRDA is to determine the nature, extent, and severity of injuries to natural resources, thereby providing the technical bases for evaluating and properly scaling potential restoration actions to compensate for resource injuries.<sup>78</sup> To evaluate potential injuries caused by

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<sup>74</sup> Order to Enter Consent Decree, *United States v. M/V Cosco Busan*, 557 F. Supp. 2d 1058 (N.D. Cal. Jan. 27, 2012) (No. 07-6045), 2012 WL 2003676.

<sup>75</sup> See Notice of Lodging of Consent Decree, 76 Fed. Reg. 59,738 (Sept. 27, 2011). The Department of Justice solicited public comments on the settlement for a thirty-day period. *Id.*

<sup>76</sup> Press Release, Cal. Dep't of Fish & Game, Ship Owners and Operators To Pay \$44 Million in Damages and Penalties for 2007 Bay Bridge Crash and Oil Spill (Sept. 19, 2011), available at <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=37886&inline=true>.

<sup>77</sup> *Id.*

<sup>78</sup> See, e.g., 15 C.F.R. § 990.50 (LEXIS 2014).

the Oil Spill, the Trustees implemented assessment procedures<sup>79</sup> based on the following criteria:

(1) the range of procedures available under . . . the OPA [NRDA] regulations; (2) the time and cost necessary to implement the procedures, and considering whether the additional cost of more complex procedures were related to the expected increase in the quantity and/or quality of the information to be acquired; (3) the potential nature, degree, and spatial and temporal extent of the injury; (4) potential restoration actions for the injury; (5) the relevance and adequacy of information generated by the procedures to meet information requirements of planning appropriate restoration actions; and (6) input from scientific experts.

. . . .

Each injury assessment focused on determining both the magnitude of the injury (e.g., number of animals killed, acres impacted, or days of lost recreational opportunity) and the time to full recovery. This produced an estimate of the initial and interim (from the time of injury until full recovery) losses resulting from the Oil Spill.<sup>80</sup>

The Trustees used a service-to-service restoration-based approach to quantify wildlife and habitat injuries.<sup>81</sup> Using this approach, the Trustees evaluated restoration projects that would “restore the injured resources and compensate for the interim losses between the time of the [Oil Spill] and full recovery to the conditions that would have existed had the spill not occurred.”<sup>82</sup>

Scaling can be used to determine whether the scope of a restoration project will adequately compensate for the injuries and lost services caused by an event such as the Oil Spill. Often, the Trustees rely upon a Resource Equivalency Analysis to evaluate injuries to certain resources, which is referred to as a Habitat Equivalency Analysis when applied to habitat injuries.<sup>83</sup> For human recreational losses, the Trustees utilized a valuation approach that estimated the number of lost user-days for impacted activities and locations.<sup>84</sup> After making this determination, the Trustees calculated the lost value in monetary terms, taking into account the number of losses and the economic value for each recreational category.<sup>85</sup>

<sup>79</sup> See 15 C.F.R. § 990.27(b) (LEXIS 2014).

<sup>80</sup> COSCO BUSAN OIL SPILL TRS., *supra* note 1, at 48.

<sup>81</sup> *Id.*; See 15 C.F.R. § 990.53(d)(2) (LEXIS 2014).

<sup>82</sup> COSCO BUSAN OIL SPILL TRS., *supra* note 1, at 48.

<sup>83</sup> *Id.* at 48-49.

<sup>84</sup> *Id.* at 48.

<sup>85</sup> *Id.* at 49.

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B. THE INJURY CLASSIFICATIONS UTILIZED BY THE TRUSTEES

The Trustees created categories of natural resources injured by the Oil Spill. "A team was assigned to each category that included representatives from several Trustee agencies, one or more consultants with expertise in the field, and at least one representative of the Responsible Party."<sup>86</sup> The selected categories were identified as Birds; Mammals; Fish and other Aquatic Fauna; Rocky Intertidal Habitat; Salt Marsh, Mud, and Sand Flats; Sandy Beach Habitats; Eelgrass; and Human Recreational Uses.<sup>87</sup> The Trustees determined that injury to the mammal population was minimal, and they did not propose a specific restoration project to address mammal injury. However, projects such as the herring restoration benefits mammals, because herring is an important food source for them.<sup>88</sup>

I. Birds

Birds are susceptible to injury caused by oil, as it impairs the ability of feathers to keep a bird warm in cold water.<sup>89</sup> In a cold environment such as the Bay Area, even a small amount of oil may prove lethal.<sup>90</sup> The Oil Spill caused the death of approximately 6,849 birds representing sixty-five different species, primarily "diving ducks, grebes, cormorants, and murrees."<sup>91</sup>

The Trustees determined that it was not practical to implement separate restoration projects for each bird species and that projects with a broader reach would efficiently provide appropriate restoration benefits.<sup>92</sup> The Trustees selected appropriate restoration projects using categories based on specified criteria:

1. The species in each group should be similar in their habitat preferences and life histories.

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<sup>86</sup> *Id.* at 52

<sup>87</sup> *Id.* at 51.

<sup>88</sup> *Id.* at 95.

<sup>89</sup> *Id.*

<sup>90</sup> *Id.*

<sup>91</sup> *Id.* at 15. Several bird species impacted by the Oil Spill were of special concern due to their population status under federal and state designations. These included three listed species under the federal and state endangered species acts: the California Brown Pelican, the Western Snowy Plover, and the Marbled Murrelet. *Id.* at 29. Fourteen bird species assigned to categories of moderate or high conservation concern by the North American Waterbird Conservation Plan were also impacted. *Id.* at 30 tbl.1.

<sup>92</sup> *Id.* at 52-53.

2. The species in each group are likely to benefit from a single restoration action.
3. Each grouping must contain one or more species for which there are feasible restoration alternatives.
4. Species with declining populations and/or that have special restoration needs should be specifically addressed to the extent feasible.<sup>93</sup>

## 2. *Fish*<sup>94</sup>

Based on the type of oil spilled and water testing, the Trustees found it unlikely that the Oil Spill measurably impacted fish inhabiting deeper subsurface waters.<sup>95</sup> However, there were potential impacts to fish “along the shorelines, where wave action and sediments can mix the oil into the water column.”<sup>96</sup> After investigating potential impacts to fish and other aquatic organisms along the shoreline, the Trustees determined that herring spawn in the affected area were deleteriously impacted by the Oil Spill and an appropriate proxy species for the fish category.<sup>97</sup> The Trustees selected herring as the proxy species for shoreline and near-shore species, because herring are sensitive to oil toxicity and their primary spawning location was within that area.<sup>98</sup> The Trustees estimated that, because of the Oil Spill, “14% to 29% of the winter 2007-08 herring spawn was lost due to widespread egg mortality in some areas of the Bay.”<sup>99</sup>

The Trustees’ focus on herring included a “field study conducted in February 2008 that showed high rates of mortality and deformities in herring eggs collected from mid to low intertidal areas within the [Oil Spill] zone.”<sup>100</sup> Herring were the subject of several follow-up studies be-

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<sup>93</sup> *Id.* at 53 (grouping impacted species as follows: large diving ducks, loons; large grebes; salt pond divers; Alcids and Procellariids; Marbled Murrelets; California Brown Pelicans, cormorants, gulls; and shorebirds).

<sup>94</sup> *Id.* at 95.

<sup>95</sup> *Id.* at 95-96. (“The type of fuel oil spilled, IFO-380, is a thick black oil with a specific gravity less than that of seawater or bay water, making it unlikely that significant amounts of oil would be found submerged. Past experience and scientific models . . . suggest that a week after the [Oil Spill] approximately 90% of the *Cosco Busan* oil remaining in the environment (i.e., that which was not recovered during cleanup operations) was either still floating on the surface of the water or concentrated in nearshore intertidal areas (i.e., beached), 8% had evaporated, 2% had decayed, and less than 0.01% was in the water column.”)

<sup>96</sup> *Id.*

<sup>97</sup> *See id.* at 96-97. The Tidewater goby, the California grunion, Coho salmon, and Dungeness crab were also subject to additional assessment efforts. *Id.*

<sup>98</sup> *Id.* at 104.

<sup>99</sup> *Id.* at 15.

<sup>100</sup> *Id.* at 97.



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cause other target species did not suggest the same level of spill-related risks.<sup>101</sup>

The Trustees collected spawned herring eggs at three oiled sites and one unoiled site along the Marin County coast during a post-Oil Spill herring spawn event.<sup>102</sup> The subsequent examination revealed “dramatic differences . . . in the developing embryos collected from oiled and unoiled sites.”<sup>103</sup> Specifically, the “eggs collected from oiled sites had a high proportion of mortality . . . and poor hatching outcomes, while eggs collected from the unoiled site developed and hatched normally.”<sup>104</sup> The Trustees attributed the stark results and harm to the herring eggs to the *Cosco Busan* bunker oil.<sup>105</sup> “[L]aboratory studies confirmed that the Cosco Busan bunker oil was highly phototoxic,” which renders organic material susceptible to damage upon exposure to light, even at low concentrations.<sup>106</sup>

The Trustees used the herring data to estimate the magnitude of the injuries and to scale the restoration needed to compensate for the losses incurred by the Oil Spill.<sup>107</sup> The Trustees prioritized the selection of restoration projects based on criteria that benefitted herring and other fish populations.

### 3. *Habitat*<sup>108</sup>

The Trustees separately categorized and evaluated various habitats: Rocky Intertidal Habitat; Salt Marsh, Mud and Sand Flats; Sandy Beach Habitats; and Eelgrass Habitat.<sup>109</sup> These habitats and the Oil Spill’s combined impact to 3,367 acres of shoreline habitat are discussed below.<sup>110</sup>

The Oil Spill Shoreline Cleanup and Assessment Teams (“SCAT”) were dispatched to determine the locations and severity of the oiling, and to recommend appropriate cleanup options.<sup>111</sup> The teams “reported on details concerning the approximate location, thickness, and percent cover of oil on intertidal habitats throughout San Francisco Bay and the outer

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<sup>101</sup> *Id.* at 97-104.

<sup>102</sup> *Id.* at 104.

<sup>103</sup> *Id.*

<sup>104</sup> *Id.* Other possible factors were also evaluated, but the Trustees found no evidence to support any other cause for the herring egg losses observed at oiled sites. *Id.* at 106.

<sup>105</sup> *Id.* at 107.

<sup>106</sup> *Id.*

<sup>107</sup> *Id.*

<sup>108</sup> *Id.* at 112.

<sup>109</sup> *Id.* at 15.

<sup>110</sup> *Id.* at 16, 112-44.

<sup>111</sup> *Id.* at 112.

coast shoreline.”<sup>112</sup> The SCAT data “assist[ed] response crews in prioritizing cleanup decisions” and was used as part of the Trustees’ injury assessment.<sup>113</sup> Surveys and evaluations conducted throughout the Bay Area measured eelgrass bed density to identify any “anomalies that may have occurred during response activities.”<sup>114</sup> Additional Oil Spill observations, such as information from Beach Watch surveyors and other individuals and organizations, were used to supplement the SCAT data.<sup>115</sup>

The salt marshes, tidal flats, rocky shorelines and beaches impacted by the Oil Spill were quantified by acre.<sup>116</sup> The extent of the injuries for each habitat to achieve full recovery was estimated based on the data collected, scientific literature, and expert consultation.<sup>117</sup> The SCAT and supplemental oiling data were incorporated into a “maximum observed oiling” map that delineated the known oil exposure.<sup>118</sup>

The impacted shoreline was categorized by acre for each of the following habitats: sandy beaches (648.2 acres),<sup>119</sup> marshes (18.1 acres),<sup>120</sup> tidal flats (1,376.9 acres),<sup>121</sup> rocky intertidal habitat (384.3 acres),<sup>122</sup> and eelgrass (939.9 acres),<sup>123</sup> for a total 3,367 acres of shoreline habitat.<sup>124</sup> Based on the collected acreage data, the Trustees selected appropriate restoration projects to benefit each habitat.

#### 4. *Human Recreational Uses*<sup>125</sup>

The San Francisco Bay Area includes many national, state, regional, and local parks with rich natural resources providing exceptional recreational opportunities in a major metropolitan area. The Trustees determined that 1,079,900 human recreational user-days were lost, representing a wide variety of activities including recreational fishing, boating, general beach use, dog-walking, and surfing.<sup>126</sup>

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<sup>112</sup> *Id.*

<sup>113</sup> *Id.*

<sup>114</sup> *Id.* at 114.

<sup>115</sup> *Id.* at 112.

<sup>116</sup> *Id.* at 114-15.

<sup>117</sup> *Id.*

<sup>118</sup> *Id.* at 115-16 & fig.14.

<sup>119</sup> *Id.* at 120 tbl.4.

<sup>120</sup> *Id.* at 128 tbl.5.

<sup>121</sup> *Id.* at 129 tbl.6.

<sup>122</sup> *See id.* at 136-37 tbls.7, 8.

<sup>123</sup> *Id.* at 142 tbl.10.

<sup>124</sup> *Id.* at 16.

<sup>125</sup> *Id.* at 144.

<sup>126</sup> *Id.* at 16.

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The Oil Spill affected numerous national parks, sanctuaries, and public attractions. Affected units of the National Park System included the Golden Gate National Recreation Area, the Point Reyes National Seashore, and the San Francisco Maritime National Historic Park.<sup>127</sup> The Monterey Bay and Gulf of the Farallones National Marine Sanctuaries were impacted, as were popular tourist attractions such as Alcatraz Island and Angel Island.<sup>128</sup>

The Oil Spill closed or restricted access to a large number of beaches, reduced on-water activities, and prohibited fishing over an eight-county area.<sup>129</sup> The wide geographic range of the Oil Spill limited the number and availability of potential substitute recreational locations.<sup>130</sup>

“To quantify lost and impaired human uses resulting from the [Oil Spill], the Trustees, partially in cooperation with the [vessel interests] . . . gathered data regarding visitor use of impacted sites and associated activities.”<sup>131</sup> The Trustees valued the lost user-days per activity to determine damages.<sup>132</sup> Lost human recreational damages were determined to be \$15 million for general shoreline use, \$2.4 million for fishing, and \$1.4 million for boating, for a total of \$18.8 million.<sup>133</sup> As a result of the substantial human recreational loss, the Trustees selected projects to restore recreational benefits throughout the Bay Area.<sup>134</sup>

#### VIII. SELECTION AND IMPLEMENTATION OF RESTORATION AND HUMAN RECREATIONAL USE PROJECTS

“The Trustees’ authority under OPA . . . is to make the environment and the public whole for injuries to natural resources and natural resource services resulting from the discharge of oil.”<sup>135</sup> This is “achieved through the restoration, rehabilitation, replacement, or acquisition of equivalent natural resources and/or services.”<sup>136</sup> To meet OPA’s purpose, preferred potential projects must have a nexus “between the natural-resource injuries and the proposed restoration actions.”<sup>137</sup>

<sup>127</sup> *Id.* at 21, 36.

<sup>128</sup> *Id.* at 21.

<sup>129</sup> *Id.* at 144.

<sup>130</sup> *Id.*

<sup>131</sup> *Id.* at 49.

<sup>132</sup> *See id.* at 148 (“The value of a lost user day is the value that a trip brings to that individual.”) For example, the lost value for most boating trips was set at a rate \$78 per trip. *Id.*

<sup>133</sup> *Id.* at 149 tbl.11.

<sup>134</sup> *See id.* at 149.

<sup>135</sup> *Id.* at 16; *See* 33 U.S.C.S. § 2706(c)(1)(C) (LEXIS 2014).

<sup>136</sup> COSCO BUSAN OIL SPILL TRS., *supra* note 1, at 16.

<sup>137</sup> *Id.*

OPA restoration actions are either primary or compensatory.<sup>138</sup> “Primary restoration is any action taken to accelerate the return of injured natural resources and services to their baseline condition—the condition the resource would have been in were it not for the spill.”<sup>139</sup> The Trustees may choose to rely on natural recovery or pursue active restoration efforts depending on the circumstances.<sup>140</sup>

“Compensatory restoration is an action taken to compensate for interim losses of natural resources and services pending recovery to baseline conditions.”<sup>141</sup> The scale of the “required compensatory restoration [depends] on the extent and severity of the initial resource injury and how quickly each resource and associated service returns to baseline.”<sup>142</sup> Primary restoration that accelerates resource and service recovery reduces the amount of required compensatory restoration.<sup>143</sup>

#### A. THE DARP AND CRITERIA FOR SELECTING RESTORATION PROJECTS

Consistent with the OPA regulations, the Trustees prepared the DARP to describe the injuries resulting from the Oil Spill and to evaluate appropriate restoration projects that would compensate the public for those injuries. Prior to the selection of the projects identified in the DARP, the Trustees considered numerous restoration alternatives that were evaluated using the regulatory factors<sup>144</sup> and other criteria.<sup>145</sup>

The OPA NRDA regulations specify that “[o]nly those alternatives considered technically feasible and in accordance with applicable laws, regulations, or permits” are appropriate for further evaluation.<sup>146</sup> The OPA NRDA regulations list six factors that the Trustees used to evaluate project alternatives:

- (1) The cost to carry out the alternative;

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<sup>138</sup> *Id.*

<sup>139</sup> *Id.*

<sup>140</sup> *Id.*

<sup>141</sup> *Id.* Trustees are authorized to ensure that compensatory restoration projects are implemented to compensate the public for interim losses. *Id.*

<sup>142</sup> *Id.*

<sup>143</sup> *Id.*

<sup>144</sup> *Id.* at 49-50.

<sup>145</sup> *Id.* at 50-51. Permits may also be required by state permitting requirements, such as those required under California’s Porter-Cologne Water Quality Control Act, CAL. WATER CODE § 13000 et seq. (LEXIS 2014).

<sup>146</sup> 15 C.F.R. § 990.53(a)(2) (LEXIS 2014).

- (2) The extent to which each alternative is expected to meet the trustees' goals and objectives in returning the injured natural resources and services to baseline and/or compensating for interim losses;
- (3) The likelihood of success of each alternative;
- (4) The extent to which each alternative will prevent future injury as a result of the incident, and avoid collateral injury as a result of implementing the alternative;
- (5) The extent to which each alternative benefits more than one natural resource and/or service; and
- (6) The effect of each alternative on public health and safety.<sup>147</sup>

When evaluating restoration alternatives, the Trustees considered the following criteria: (1) cost-effectiveness, (2) nexus, (3) time to provide benefits, (4) duration of benefits; (5) benefit to multiple resources and services, (6) range of projects, (7) maintenance and oversight, (8) collaboration opportunities, (9) total project cost and accuracy of estimate, (10) documented benefits to the public, (11) educational and research value, and (12) non-duplication.<sup>148</sup>

The Trustees considered restoration concepts and alternatives "with the potential to provide primary and compensatory restoration."<sup>149</sup> The selection criteria were consistent with the legal guidelines provided in OPA regulations.<sup>150</sup> The Trustees selected twelve restoration projects to address the resources impacted by the Oil Spill, and they engaged in a public process to identify impacted human recreational use projects.<sup>151</sup> "All of the projects [were] designed to restore, replace, or acquire the equivalent of the lost resources and/or their services through restorative on-the-ground actions."<sup>152</sup> In many locations, projects were designed to simultaneously resolve impacts that harmed multiple resources.<sup>153</sup>

"The projects were selected based upon the biological needs of the injured species and the feasibility of restoring the resources."<sup>154</sup> Potential restoration projects that were located within the Oil Spill area were given priority.<sup>155</sup> In accordance with OPA, the proposed projects were "scaled" so that the benefits of the restoration offset the injuries caused by the Oil Spill.<sup>156</sup>

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<sup>147</sup> 15 C.F.R. § 990.54(a) (LEXIS 2014).

<sup>148</sup> COSCO BUSAN OIL SPILL TRS., *supra* note 1, at 50-51.

<sup>149</sup> *Id.* at 16.

<sup>150</sup> *Id.*; 15 C.F.R. § 990.54(a) (LEXIS 2014).

<sup>151</sup> See COSCO BUSAN OIL SPILL TRS., *supra* note 1, at 16.

<sup>152</sup> *Id.* at Exec. Summary.

<sup>153</sup> See *id.* at 16-19 figs.2, 3.

<sup>154</sup> *Id.* at Exec. Summary.

<sup>155</sup> *Id.*

<sup>156</sup> *Id.* at 18.

## B. THE FINAL PROJECTS

The projects selected by the DARP include the following:

- Creation of grebe nesting habitat at Tule Lake National Wildlife Refuge;
- Creation of over-wintering duck and grebe habitat at the South Bay Salt Ponds;
- Creation of nesting and roosting habitat for cormorants, pelicans, and shorebirds at the Berkeley Pier;
- Creation of nesting habitat for seabirds at the Farallon Islands;
- Creation of a grant project to benefit Surf Scoters;
- Restoration of Marbled Murrelet nesting habitat through corvid management;
- Restoration of eelgrass at several sites inside the Bay, to benefit both eelgrass and herring;
- Restoration of sandy beach habitats at Muir Beach and Albany Beach;
- Restoration of salt marsh and mudflat habitats at Aramburu Island;
- Restoration of native oysters and rockweed at several sites inside the Bay, to benefit rocky intertidal communities;
- Creation of a process to fund a wide variety of human recreational use projects at impacted sites across the spill zone.<sup>157</sup>

This Article does not discuss these final projects further because they remain under development or are still being implemented.

## IX. CONCLUSION

There is no question that the Oil Spill caused great harm to San Francisco Bay Area resources. However, the response to the Oil Spill was immediate and dramatic, as the United States, the State of California, local governments, responsible parties, and local citizens worked together to timely identify injured natural resources, determine damages and losses, and to evaluate and select appropriate restoration and other projects funded by the *Cosco Busan* settlement. Further, the Oil Spill provided a unique opportunity to observe litigation conducted in parallel with the Trustees' and the responsible parties' joint effort to evaluate the impacted natural resources and lost recreational opportunities. This joint effort serves as a model for responding proactively to future oil spills,

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<sup>157</sup> *Id.* at Abstract; *see also id.* at 16-20.

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and is an example of how combined forces turned back the tide to ensure that the San Francisco Bay Area recovers from this unfortunate and unprecedented local incident.