

Like a Phoenix Rising from the Ashes: Melding Wildfire Law into a Comprehensive Statute

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INTRODUCTION: THE NEED FOR COMPREHENSIVE WILDFIRE LEGISLATION

Each year, thousands of acres of state and federal lands burn because of negligence by railroads, utility companies, logging companies, and others. Early in the 2016 fire season there were at least forty large-scale fire incidents burning across the western United States.¹ In addition to threatening the public and putting firefighters' lives at risk, such fires cost millions of dollars to suppress; they destroy merchantable timber and fiber worth many millions more; they destroy valuable wildlife habitat; they diminish other vital environmental services provided by forests and adjacent lands, including scenic vistas, hiking, wildlife observation, absorption of atmospheric carbon dioxide, and control of erosion; they impose enormous restoration costs on government; and they degrade natural resources for decades. When fire conditions are severe, state and federal lands can suffer astronomical fire losses in a single season, and those seasons are beginning to last year-round.²

Western populations have grown exponentially in recent years, and with this growth has come the expansion of the wildland-urban interface.³ Urban sprawl, enticing recreational areas, and scenic views have encouraged many to build homes and communities in areas that were once undeveloped lands—undeveloped lands that burned regularly. Those choosing to live in these areas may not appreciate the ecological value of a forest fire, nor do insurance companies enjoy paying out large sums of money to policy holders when those fires destroy entire communities. The insurance industry has responded to the growing threat of wildfire by offering fire-proofing education and inspection programs; however, the industry has also increased rates in

¹ *Active Fire Mapping Program*, U.S. DEP'T OF AGRIC., <https://fsapps.nwcg.gov/> (last visited Feb. 10, 2018) (at the time of the researching for this Article this cite was used to determine the number of fires burning at that time. This citation provides that information as historical fire data).

² Eric Holthaus, *Get Used to the Flames: California's "Fire Season" is Basically Year-Round Now*, SLATE (Apr. 24, 2014), http://www.slate.com/articles/technology/future_tense/2014/04/california_s_fire_season_is_basically_year_round_now.html.

³ U.S. DEP'T OF AGRIC., *THE RISING COST OF WILDFIRE OPERATIONS: EFFECTS ON THE FOREST SERVICE'S NON-FIRE WORK* 3 (2015), <https://www.fs.fed.us/sites/default/files/2015-Fire-Budget-Report.pdf>.

high-risk areas, and has even dropped policies, which has garnered criticism from policy holders and the government alike.⁴

Ultimately, fire management falls to the government. The federal agency charged with managing fires and the lands affected by them is the United States Forest Service (USFS or “Forest Service”). Robert Keiter sums up the problem faced by the government with the increased wildland-urban interface: “[d]iscounting the fact that they have chosen to live in a fire prone environment, these new residents demand and expect government protection from fire dangers lurking on adjacent public lands, frequently asserting private property rights to support their demands.”⁵ Despite the public’s expectations, the Forest Service is having an increasingly difficult time meeting those demands and needs.

The Forest Service notes in a 2015 report that “[f]unding for non-fire programs has not kept pace with the increased cost of fighting fire.”⁶ In 2014, the firefighting budget grew by \$115 million, which decreased funding to management and non-fire programs by the same.⁷ This cut required the agency to “forego opportunities to complete vital restoration work and meet public expectations for services.”⁸ Such non-fire services include “those that improve the health and resilience of our forested landscapes and mitigate the potential for wildland fire in future years.”⁹ The 2015 report further noted that recreation facilities will need to be closed due to the inability to maintain premises, especially water services and septic systems.¹⁰ It goes on to state, “[a]s a lack of funds forces the Forest Service to delay needed maintenance and improvements on many roads and bridges, access will become more restricted, environmental impacts will increase rapidly, and vulnerability to catastrophic failure from natural disasters will greatly increase.”¹¹ This Article will go on to suggest that, if such programs are funded properly, they could be invaluable during a statutorily imposed restoration process, as they

⁴ Robert B. Keiter, *The Law of Fire: Reshaping Public Land Policy in an Era of Ecology and Litigation*, 36 ENVTL. L. 301, 356–57 (2006).

⁵ *Id.* at 374.

⁶ DEP’T OF AGRIC., *supra* note 3, at 3.

⁷ *Id.*

⁸ *Id.*

⁹ *Id.*

¹⁰ *Id.* at 9–10.

¹¹ *Id.* at 10.

would aid in identifying baseline conditions, expediting early restoration processes.

Congress has recognized the budgeting crisis that faces the Forest Service and has attempted on numerous occasions to find a solution.¹² The most recent efforts came in May 2016 when Senators Lisa Murkowski (R. Alaska), Maria Cantwell (D. Wash.), Ron Wyden (D. Ore.), and Mike Crapo (R. Idaho) of the Senate Energy and Natural Resources Committee released a bipartisan discussion draft titled *Wildfire Budgeting, Response, and Forest Management Act* (WBRFMA).¹³ Recognizing the economic toll wildfires have taken on the nation in the last few years, the bill aims to find a solution to budgeting problems within the fire management agencies in order to work toward a twenty-first century management strategy.¹⁴

The way fire management is currently structured will not be sustainable in the future. The current budget for the Forest Service and other similarly charged agencies does not provide enough for both preventative management and actual fire response.¹⁵ The government is able to recoup some of its costs through lawsuits against negligent actors, but the sporadic and unpredictable recoveries cannot be counted on as the only solutions. Rather, a comprehensive command and control statute that allows for damage recovery would give certainty to litigation and aid current proposed legislation to alleviate budgetary issues. Though the 2016 WBRFMA discussion draft is a step in the right direction toward adopting a better management and budgeting strategy, it would be bolstered by further legislation treating wildfires as what they very often are: environmental disasters.

¹² See, e.g., Rob Chaney, *Long-term Budget Fix for Fighting Wildfires Dies in Congress*, BILLINGS GAZETTE, Dec. 09, 2016, http://billingsgazette.com/news/state-and-regional/montana/long-term-budget-fix-for-fighting-wildfires-dies-in-congress/article_2ab6abd0-8e40-5b91-ba6d-adfe70049b61.html.

¹³ *Senators Work to Improve Forest Management and Wildfire Budgeting*, U.S. SENATE COMMITTEE ON ENERGY AND NAT. RESOURCES (May 25, 2016), <https://www.energy.senate.gov/public/index.cfm/2016/5/senators-work-to-improve-forest-management-and-wildfire-budgeting>.

¹⁴ *Id.*

¹⁵ DEP'T OF AGRIC., *supra* note 3, at 2 (In a recent report, the Forest Service (the primary agency tasked with fighting wildfire) noted that “[i]n 1995, fire made up 16 percent of the Forest Service’s annual appropriated budget—this year [2015], for the first time, more than 50 percent of the Forest Service’s annual budget will be dedicated to wildfire.”).

The United States has faced several large-scale environmental disasters that have prompted legislative reform since the 1970s, the most notable being the Exxon-Valdez Oil Spill of 1989.¹⁶ When traditional maritime and tort law were insufficient to restore the ecosystem and recoup the costs of the spill, Congress adopted the Oil Pollution Act of 1990 (OPA).¹⁷ Having a reliable statutory framework has made dealing with subsequent oil spills a more efficient, comprehensive, and final process. There is no reason why a similar statutory structure to those applied in the context of an oil spill could not be applied to wildfires. Aside from articulating a strong public policy, such a statute would provide a uniform rule allowing the government to recoup its cost for natural resource damages resulting from wildfires that might begin to offset the budget crisis federal agencies are currently facing.

One notable attribute of OPA and similar large-scale environmental disaster statutes, such as the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA),¹⁸ is the damage assessment procedure, or Natural Resource Damage Assessment (NRDA), which often utilizes a methodology known as habitat equivalency analysis (HEA) to estimate natural resource damages.¹⁹ Many federal environmental statutes utilize the NRDA process, in order to assess environmental damage and develop restoration plans following an environmental disaster.²⁰

During a NRDA, natural resource trustees at state and federal levels are charged with determining whether or not a natural resource has been injured, the extent of that injury based on baseline conditions of the resource prior to the damage, and calculating the appropriate compensation.²¹ In order to calculate the actual damage dollar amount, trustees, using guidance from regulations, often will rely on

¹⁶ See ROVER V. PERCIVAL ET AL., ENVIRONMENTAL REGULATION 103–14 (Richard A. Epstein et al. eds., 2d ed. 1992).

¹⁷ 33 U.S.C.A. §§ 2701–20 (West 2018) (effective Oct. 15, 2010); see generally Allan Kanner, *Natural Resource Restoration*, 28 TUL. ENVTL. L.J. 355 (2015); OIL POLLUTION LIABILITY AND COMPENSATION ACT OF 1989, S. REP. NO. 101-94 (1989).

¹⁸ Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C.A. §§ 9601–9675 (West 2018).

¹⁹ Natural Resource Damage Assessments, 15 C.F.R. §§ 990.10.30, .50–.56 (Jan. 1, 2011) (providing relevant OPA regulations); CERCLA §§ 9607, 9611.

²⁰ 15 C.F.R. §§ 990.10.30, .50–.56.

²¹ 33 U.S.C.A. § 2706(b)–(g) (West 2018).

HEA, a method by which to determine damage costs that focuses primarily on habitat-to-habitat restoration rather than attempting to pin a market value price tag on a given resource.²² It contemplates the whole ecosystem rather than compartmentalizing specific aspects. The main goal of these NRDA's is always first and foremost restoration of the natural resource.²³

In large-scale environmental disasters, it is often most effective if damages are assessed at an ecosystem level to restore natural resources to the level necessary to fully compensate the public trust.²⁴ HEA allows natural resource trustees to do just that and make damage determinations not based on monetary values, but on ecosystem values. When combined with a twenty-first century forest management strategy, a wildfire statute that incorporates the use of HEA could bring much needed stability to wildfire law, and perhaps begin to prevent these large-scale disasters.

I

A HISTORY OF WILDFIRE MANAGEMENT AND DAMAGES

The government typically seeks four categories of damages in wildfire cases: (1) the actual cost of attacking and suppressing a fire; (2) the lost commercial value of burned timber; (3) the costs required for reforestation of the burned area; and (4) compensation for the degradation of natural resources (for example, recreational values, loss of habitat, diminution of watershed, loss to future generations) while the burned forest recovers from the fire.²⁵ The availability of those damages is governed by federal common law, which looks to state law as a guide except where it conflicts with federal policy.

The guiding principle of law is that tort damages should compensate “all the damage proximately caused.”²⁶ Courts closely examine damages claims in fire cases to ensure that an award *only* compensates for the detriments caused by the fire, and it is California law that damages in a fire case must be “reasonable” under the

²² 15 C.F.R. § 990.53 (2011).

²³ See 33 U.S.C.A. § 2706(b)–(g).

²⁴ For a discussion of how the Public Trust pervades many statutes, see Mark Davis & Christopher Dalbom, *The Trust Abides*, 37 NAT'L WETLANDS NEWSL. No. 4 (Env't'l Law Inst. Washington, D.C.), July–Aug. 2015, at 18–19.

²⁵ See, e.g., *United States v. Union Pac. R.R. Co.*, 565 F. Supp. 2d 1136, 1138–39 (E.D. Cal. 2008).

²⁶ E.g., CAL. CIV. CODE § 3333 (West 2018).

circumstances.²⁷ California law raises one question worth addressing here: if the government agency recovers primary restoration (of the forest habitat) and compensatory damages (loss of use of ecological services between the initiation of the injury and completion of the restoration), has all ecological and environmental value been compensated? From the perspective of the federal trustee,²⁸ the answer is generally no. It then follows that there are compensable damages remaining.

Prior to 2000, the federal government would typically settle wildfire cases for damages well below ten million dollars.²⁹ In California, for example, damages typically ranged between three and four million dollars per fire, despite the fact that it was likely much more expensive to fight said fire.³⁰ Generally speaking, damages were calculated based on the fair market value of the land as it was considered a type of property damage; this fails to consider, let alone incorporate, the inevitable ecosystem damage—including damage to soils, water courses, and animal life. Opponents of actual ecosystem valuation in the calculation of damages point incredulously to the USFS’ claim that the land in its care has no market value; a defense attorney has derisively claimed this renders them “priceless” and is the ultimate reason for these unprecedented settlements rather than the unavoidable fact that a forest system has far more value than mere market value of trees.³¹ If we were to abide their insistence that the only “fair” damage calculation is that based on market value of the

²⁷ See *Union Pac. R.R. Co.*, 565 F. Supp. 2d at 1144 (quoting *People v. S. Pac. Co.*, 139 Cal. App. 3d 627, 635 (1983)).

²⁸ See *Oil and Hazardous Substance Liability*, 33 U.S.C.A. § 1321(f)(2) (West 2018) (effective Dec. 18, 2014); see also 33 U.S.C.A. § 2702(b)(2) (West 2018) (explaining covered removal costs and damages); 42 U.S.C.A. § 9607(a)(4)(c) (West 2018) (effective Jan. 11, 2002) (assigning liability to individuals who are responsible for damaging natural resources with hazardous substances). “Trustees” of natural resources are government bodies (federal, state, or tribal) that either own or exercise significant control over the use of natural resources. 33 U.S.C. § 2706; 42 U.S.C. § 9607. They are the only parties authorized to recover natural resource damages under these statutes.

²⁹ McClatchy Newspapers, *U.S. Government to Announce \$102M Forest Fire Settlement with Railroad*, THE GUARDIAN, July 22, 2008, <https://www.theguardian.com/environment/2008/jul/22/forests.usa> (explaining that prior to the Storrie Fire, the largest wildfire related settlement was \$14 million).

³⁰ See Steven S. Kimball, *Forest Fire Damages in Transition*, 56 FED. LAW. 38 (2009).

³¹ See Richard S. Linkert, Esq., *Are Defendants Getting Burned? Federal Wildfire Litigation Policy*, MATHENY SEARS LINKERT JAIME, LLP, at 4, <http://www.mathenysears.com/news/RSL%20Article.pdf>.

trees, or in the alternative, the cost to replant the trees, it would be akin to saying that we should only assess oil spill damages based on the market value of the fish lost and the cost to repopulate the fisheries. Further still, because USFS land is not given market value, damages would be zero. Companies would have free range to wantonly burn federal lands. Such an argument is asinine.

More recently, since the August 17, 2000, *Storrie Fire*, the government has begun to recover costs not only from the commercial value of destroyed timber, but also from replanting and from the loss of uses of the injured resources, such as recreation, scenery, and wildlife habitat.³² The *Storrie Fire* burned approximately 52,000 acres of National Forest System (NFS) land in the Plumas and Lassen National Forests.³³ The fire was ignited on NFS lands while a Union Pacific Railroad Company work crew was repairing a rail.³⁴ After the *Storrie Fire* was extinguished, the United States brought suit against Union Pacific Railroad Company.³⁵ The United States contended that the Railroad and its work crew breached its duty of care while conducting the repair by failing to monitor and suppress the fire before leaving the work site.³⁶ The government claimed that it had suffered over \$121 million in timber damages, between \$24 and \$33 million in reforestation costs, and \$13 million in loss of use for non-timber related services which included habitat and environmental services.³⁷

Union Pacific attempted, in vain, to argue that because some of the burned lands were considered “off-base”—where no logging is permitted for a term of years—that the government could not recover damages to timber.³⁸ It further contended that certain Wilderness Areas could never be logged or reforested, and as such the government could not recover for damages based on pre-fire timber valuation or reforestation.³⁹ In an effort to limit damages, Union Pacific also argued that it was entitled to an offset for the value of the timber the United States was able to salvage, which the court rejected, noting that the United States deducted the money it had recovered

³² Kimball, *supra* note 30, at 38.

³³ *United States v. Union Pac. R.R. Co.*, 565 F. Supp. 2d, 1136, 1138 (E.D. Cal. 2008).

³⁴ *Id.* at 1139.

³⁵ *Id.* at 1138.

³⁶ *Id.*

³⁷ *Id.*

³⁸ *Id.* at 1145.

³⁹ *Id.* at 1146.

from its estimated timber damages.⁴⁰ Finally, Union Pacific argued that HEA damages were duplicative, overlapping, and unauthorized, but again, the court found that damages and the methods of determining them are broad under California law.⁴¹

The contested habitat equivalency damages included the following: 1,600 acres of spotted owl habitat; 12,000 acres of carnivore habitat; 9,000 acres of old growth forest which impacts bald eagles, goshawks, and pine martens; impacts to amphibians and fish from silt run-off into streams; and scenic and recreational values given the area's location along Highway 70 and the Pacific Crest Trail.⁴² Plaintiffs explained that habitat equivalency damages "provide compensation for loss of the non-timber forest services that resulted from the fire. These services include aesthetic/scenic use, wildlife habitat, and recreational use."⁴³ Ultimately, damages were estimated to be \$13,236,000.⁴⁴ Importantly, Judge Damrell highlighted the fact that habitat equivalency damages are distinct from mere timber values and replanting costs.⁴⁵ Despite the fact that this method of damage determination was not included in the California statute under which the plaintiffs brought suit,⁴⁶ the court found that the plaintiffs were entitled to "the amount which will compensate [it] for all the detriment proximately caused [by the defendant], whether [the harm] could have been anticipated or not."⁴⁷

The court held that the HEA damages were recoverable, despite Union Pacific's arguments to the contrary.⁴⁸ The court held that under California law, specifically section 3333 of the California Civil Code, a plaintiff is "entitled to *full* compensation for *all* of its damages,"⁴⁹ noting that "there is no fixed rule for the measure of tort damages under Civil Code section 3333. The measure that most appropriately compensates the injured party for the loss sustained should be

⁴⁰ *Id.*

⁴¹ *Id.*

⁴² *Id.* at 1151–52.

⁴³ *Id.* at 1151.

⁴⁴ *Id.* at 1152.

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ *Id.* (citing CAL. CIV. CODE § 3333 (West 2018)).

⁴⁸ *Id.* at 1139. It is important to note that the first time that HEA was recognized in a wildfire case was following the 1994 *Big Creek Fire*. That case settled for \$14 million in 2006. Linkert, *supra* note 31, at 5.

⁴⁹ *Union Pac. R.R. Co.*, 565 F. Supp. 2d, at 1143.

adopted.”⁵⁰ The court went on to state that “the . . . law is clear that there is not one particular method for ascertaining . . . damages.”⁵¹ The court highlighted the fact that the plaintiff may argue its many identifiable damage categories to the jury.⁵² The court concluded that “diminution in market value is not a reasonable method of ascertaining the damages to the unique land at issue,”⁵³ and as such, Union Pacific’s argument failed.

Inadvertently highlighting the purpose of HEA itself, the court noted that “[e]ssentially, UP [(Union Pacific)] contends that plaintiff has no quantifiable recovery for the destruction of this area-under UP’s view, UP effectively had a free pass to burn this land.”⁵⁴ The court emphasized that under the premise set forth by Union Pacific, that lacking a monetary value, ecosystems have no compensable value whatsoever.⁵⁵ It also recognized that HEA is designed to address the non-anthrocentric values of ecosystems, which have been held time and time again as a viable way to calculate accurate natural resource damages.⁵⁶

Having failed on its summary judgment motions, and facing a jury trial with the possibility of a verdict granting damages well over \$150 million, Union Pacific settled with the United States for an unprecedented \$102 million.⁵⁷ Unfortunately, a vast majority of the settlement money is still sitting in government accounts rather than being applied to restoration, a fact that industry defense attorneys are quick to point out.⁵⁸ A comprehensive statute requiring restoration plans and prompt implementation would alleviate much of the “bureaucratic rumination” such attorneys deride.

Two years after the *Storrie Fire*, the *Copper Fire* broke out in June of 2002, eventually consuming over 20,000 acres and damaging both private and public property.⁵⁹ Two cases arose out of the fire—one

⁵⁰ *Id.* (quoting *Santa Barbara Pistachio Ranch v. Chowchilla Water Dist.*, 105 Cal. Rptr. 2d 856, 861 (Cal. Ct. App. 2002)).

⁵¹ *Id.* at 1145.

⁵² *Id.*

⁵³ *Id.*

⁵⁴ *Id.* at 1147.

⁵⁵ *Id.*

⁵⁶ *Id.* at 1151–52.

⁵⁷ Linkert, *supra* note 31, at 7.

⁵⁸ *Id.*

⁵⁹ *United States v. CB & I Constructors, Inc.*, 685 F.3d 827, 831 (2012) (noting that the fire burned 18,000 acres of National Forest and 2,000 acres of private and county owned

seeking damages to compensate for the 18,000 acres of public land damaged in the Angeles National Forest, and one for the thirty-four acres and building burned on a private ranch.⁶⁰

The court in *Kelly v. CB & I Constructors, Inc.* stated that California Civil Code section 3346 applied to wildfires,⁶¹ allowing the plaintiff to recover for the tree damage from the negligently spread fire.⁶² In contrast, the Third District Court of Appeal held in *Gould v. Madonna* that section 3346 does not apply to negligently caused fires as fire damage is governed by the Health and Safety Code.⁶³ However, the court in *Kelly* noted multiple places in which *Gould* was wrongly decided, or had since been overruled by subsequent cases.⁶⁴ In particular the court noted that fire is considered a trespass, as per *Elton v. Anheuser-Busch Beverage Group, Inc.*⁶⁵ The court in *Gould* had held otherwise.⁶⁶ As section 3346 specifically addresses damage to trees from trespass, the statute clearly applies.⁶⁷ The court concluded that the two sections are actually easily harmonized—the Health and Safety Code section 13007, which allows for recovery for damage caused by a negligently ignited fire, and section 3346, which allows for doubling of damages for damaged trees by a trespassing fire—and allow a plaintiff to recover damages for the negligence as well as double the damages to the trees themselves.⁶⁸ As such, *Gould*

property); *Kelly v. CB & I Constructors, Inc.*, 102 Cal. Rptr. 3d 32, 36 (2009) (noting that the fire ultimately consumed 20,000 acres).

⁶⁰ *Id.*

⁶¹ *Kelly*, 102 Cal. Rptr. 3d at 48. California’s Timber Trespass Statute provides:

For wrongful injuries to timber, trees or underwood upon the land of another, or removal thereof, the measure of damages is three times such sum as would compensate for the actual detriment, except that where the trespass was casual or involuntary . . . the measure of damages shall be twice the sum as would compensate for the actual detriment

Cal. Civ. Code § 3346(a) (West 2018).

⁶² *Kelly*, 102 Cal. Rptr. 3d at 48–49.

⁶³ *Gould v. Madonna*, 85 Cal. Rptr. 457, 459 (1970).

⁶⁴ *Kelly*, 102 Cal. Rptr. 3d at 45–47.

⁶⁵ *Id.* at 48 (citing *Elton v. Anheuser-Busch Beverage Grp.*, 58 Cal. Rptr. 2d 303, 305–07 (1996)).

⁶⁶ *Gould*, 85 Cal. Rptr. at 458.

⁶⁷ *Kelly*, 102 Cal. Rptr. 3d at 46–47.

⁶⁸ *Id.* (discussing CAL. HEALTH & SAFETY CODE § 13007 (West 2018) and CAL. CIV. CODE § 3346 (West 2018)).

is inapplicable here. Such an expansion is in line with the court's findings in the *Storrie Fire* case.⁶⁹

In the government claims case arising out of the *Copper Fire, United States v. CB & I Constructors, Inc.*, the Ninth Circuit characterized the “intangible environmental damages” as “non-economic damages.”⁷⁰ As noted by Richard Linkert, the defense attorney in the *Moonlight Fire* case (discussed below), this characterization of damages “appears to open the door for a qualitative ‘pain and suffering’ type argument, previously unavailable in real or property damage cases.”⁷¹ The jury in the lower court awarded the United States \$28.8 million in these intangible environmental damages, which the Ninth Circuit affirmed.⁷² Linkert expressed concern about the approval of the doubled damages in *Kelly* and the “intangible environmental damages” affirmed in *CB&I*. He noted: “[t]he approval of a ‘multiplier’⁷³ without any expert environmental economic impact testimony paves the way for an award of ‘intangible environmental damages’ that can result in a verdict wildly in excess of pre-fire fair market value, again unprecedented in real or personal property damage case law.”⁷⁴ He raised further concerns about the alternative price per acre damages method, claiming all the while that there is no real expert or scientific guidance, which is debatable.⁷⁵

In support of his opinion, Linkert highlighted the 2007 *Moonlight Fire* case. The *Moonlight Fire* burned over 65,000 acres near Sacramento, California, before burning into the *Antelope Wheeler Lightning Complex Fire*.⁷⁶ The fire allegedly started from a bulldozer owned and operated by Sierra Pacific Industries striking a rock.⁷⁷ The

⁶⁹ See *United States v. Union Pac. R.R. Co.*, 565 F. Supp. 2d 1136, 1152 (E.D. Cal. 2008).

⁷⁰ *United States v. CB & I Constructors, Inc.*, 685 F.3d 827, 837 (2012).

⁷¹ Linkert, *supra* note 31, at 9.

⁷² *CB & I Constructors, Inc.*, 685 F.3d at 827.

⁷³ *Id.* at 839.

⁷⁴ Linkert, *supra* note 31, at 9.

⁷⁵ *Id.* Mr. Linkert, like many defense attorneys, has fallen victim to the idea that natural resource damages are only damages insofar as they have an economic impact on human society, failing to recognize that ecosystems support far more than human economic needs. Natural resource damage cases are not mere property damage claims; they are cases addressing negligently caused harm to the natural resources this country is bound to protect not only for the good of its citizens, but for ecosystem and environmental health on the whole.

⁷⁶ *Id.* at 4.

⁷⁷ *Id.*

case settled for an unprecedented \$122.5 million, a large part of which was based on a HEA.⁷⁸ The United States' HEA expert, Robert Unsworth, posited that intangible environmental damages calculated with the HEA model were \$43 million, a significantly smaller amount than the United States claimed in its original complaint.⁷⁹ Linkert also noted that the "defense HEA experts, using Mr. Unsworth's own methodology and applying an offset for future fire suppression costs that he utilized in all prior cases, came up with a *net* HEA award in the \$2 to \$3 million range."⁸⁰ Though different than Mr. Unsworth's calculations, it should be noted that in nearly all environmental damage cases, the experts inevitably disagree on the extent and amount of damages to be awarded.⁸¹

Mr. Linkert's observations and concerns highlight the most important argument for a wildfire statute akin to other environmental damage statutes. If it were to be drafted in the same vein as OPA and CERCLA, such a statute would provide certainty and finality for defendants. Regulatory guidance would help to ensure the damage calculations are not wildly out of proportion to actual damages, and do not fluctuate wildly between even the plaintiff's own experts.

II

RECENT ATTEMPTS TO ADDRESS WILDFIRE-RELATED CONCERNS

A. *Wildfire Budgeting, Response, and Forest Management Act*

Fire is a particularly difficult element to manage and control. Congress and the Forest Service have historically struggled to find balance between suppression and management.⁸² Prior to large fires

⁷⁸ See Dani Meyer, *Calif. AG Blasts Misconduct Claims in Wildfire Appeal*, LAW360, <http://www.law360.com/articles/754286/calif-ag-blasts-misconduct-claims-in-wildfire-appeal>; see also Denny Walsh & Sam Stanton, *Judge Rejects Sierra Pacific Attempt to Throw out Moonlight Fire Settlement*, THE SACRAMENTO BEE, Apr. 17, 2015, <http://www.sacbee.com/news/business/article18804324.html>. The Moonlight Fire Settlement has a unique payment schedule that consists of a payment of \$55 million and deeding over 22,500 acres of Sierra Pacific's property. *Moonlight Fire Litigation*, DOWNEY BRAND, LLP, <https://www.downeybrand.com/Our-Work/Moonlight-Fire-Litigation/> (last visited Feb. 14, 2018). Save for the extraneous claims, such a structure may be useful in future fire settlements.

⁷⁹ Linkert, *supra* note 31, at 9.

⁸⁰ *Id.*

⁸¹ See Allan Kanner & Tibor Nagy, *Measuring Loss of Use Damages in Natural Resource Damage Actions*, 30 COLUM. J. ENVTL. L. 417 (2005).

⁸² Keiter, *supra* note 4, at 309–10.

that occurred in the 1970s, United States wildfire policy was complete fire suppression.⁸³ In fact, between 1946 and 1978, wildfires burned less than one million acres annually.⁸⁴ Prior to 1946, more than two million acres would burn annually.⁸⁵ Suppression policy, compounded by climate change and increasingly ill-managed forested lands, have resulted in wildfires that have burned nearly ten million acres annually in recent years.⁸⁶ Science has shown that the suppression approach only makes fire more frequent and intense.⁸⁷ As Keiter notes, “a scientific consensus began to emerge by mid-century that fire played an important and irreplaceable role in shaping the landscape and in reducing wildfire intensity.”⁸⁸

In an effort to incorporate this consensus into fire management, new practices were adopted, but not without their own set of problems.⁸⁹ Managers use prescribed burns, but the now neighboring public has (well-founded) concerns about air quality and health hazards from the blowing smoke, as well as fear that the fire will become uncontrollable.⁹⁰ Using hazard-mitigating cutting has faced backlash from environmentalists who raise Endangered Species Act (ESA) concerns for species like the spotted owl.⁹¹

Underlying all of these issues is the fact that fires today are more frequent, more intense, and more expensive. Since the prolonged fire season in 1970, and especially after the catastrophic Yellowstone fire in 1988,⁹² the forest managers and Congress have struggled with the best fire management strategies. Congress has attempted multiple times to fix both the budgeting and best practices issues in forest management and wildfire suppression.⁹³ The most recent of these

⁸³ *Id.* at 306.

⁸⁴ *Id.* at 307.

⁸⁵ *Id.*

⁸⁶ *Climate Change Indicators: Wildfires*, U.S. ENVTL. PROT. AGENCY, <https://www.epa.gov/climate-indicators/climate-change-indicators-wildfires> (last visited Dec. 17, 2017).

⁸⁷ Keiter, *supra* note 4, at 315.

⁸⁸ *Id.* at 307.

⁸⁹ *Id.* at 308–09.

⁹⁰ Leah Burrows, ‘Smoke Waves’ Will Affect Millions in Coming Decades, *HARVARD GAZETTE* (Aug. 17, 2016), https://news.harvard.edu/gazette/story/2016/08/smoke-waves-will-affect-millions-in-coming-decades/?utm_source=twitter&utm_medium=social&utm_campaign=hu-twitter-general.

⁹¹ Lawson Fite, *Using Post-Fire Timber Salvage to Restore Spotted Owl Habitat*, 31 *NAT. RESOURCES & ENVTL.* 23, 26 (2016).

⁹² Keiter, *supra* note 4, at 309.

⁹³ *Id.* at 312–13.

attempts is the proposed Wildfire Budgeting, Response and Forest Management Act (WBRFMA), which was heard by the Senate Energy and Natural Resources Committee on June 23, 2016.⁹⁴

Over the years, Congress has passed a few statutes and initiatives to restructure forest management, fire prevention, and fire-fighting.⁹⁵ In 2003, the Healthy Forests Restoration Act (HFRA) attempted to streamline the process for approval of management plans by reducing other statutory requirements under statutes such as the National Environmental Policy Act (NEPA).⁹⁶ Generally speaking, the agencies believed that there was too much law governing their actions, preventing them from following through with meaningful management, preventative measures, and fire response in a timely fashion, despite the fact that there was, and still remains, very little fire-specific law in place.⁹⁷ However, following these initiatives, “agencies still have precious little statutory guidance on wildfire policy, and even less accountability for their fire management decisions.”⁹⁸

In an effort to fix the funding gaps between fire-fighting and fire prevention, Senators Lisa Murkowski (R. Alaska), Maria Cantwell (D. Wash.), Ron Wyden (D. Ore.), and Mike Crapo (R. Idaho) proposed the WBRFMA.⁹⁹ The proposed Act’s main objective is to end the practice of fire borrowing, which is simply the practice of using forest management funds to fight fires.¹⁰⁰ Senator Crapo noted that “[s]elf-destructive fire borrowing has impacted all aspects of the Forest Service’s budget, resulting in less management of our forests,

⁹⁴ *Wildfire Budget, Response and Forest Management, Hearing on Wildfire Budgeting, Response and Forest Management Act of 2016 Before the S. Energy and Nat. Res. Comm.* 114th Cong. (2016); *Hearings and Testimony of the 114th Congress*, U.S. DEP’T OF THE INTERIOR, <https://www.doi.gov/ocl/hearings/114> (last visited Feb. 12, 2018).

⁹⁵ Forest management in the fire context must also consider the Endangered Species Act, NEPA, the National Forest Management Act, and the Federal Land Policy and Management Act. Such acts require the Forest Service and other management agencies to submit their plans for approval, which takes time and money, often things the agencies do not have.

⁹⁶ Keiter, *supra* note 4, at 346.

⁹⁷ *Id.* at 365.

⁹⁸ *Id.*

⁹⁹ *Senators Work to Improve Forest Management and Wildfire Budgeting*, U.S. SENATE COMMITTEE ON ENERGY AND NAT. RESOURCES (May 25, 2016), <https://www.energy.senate.gov/public/index.cfm/2016/5/senators-work-to-improve-forest-management-and-wildfire-budgeting>.

¹⁰⁰ *Id.*

fewer jobs, more disease and insect infestation and the downgrading of habitat for wildlife and sportsmen.”¹⁰¹ The proposed Act calls for budget cap adjustments if and when suppression funding has been exhausted; allows for investing of excess appropriated funds in low-fire years into fuel reduction work; authorizes spending of \$500 million over seven years for at risk communities to invest in programs that are tailored to reduce wildfire risk, property loss, and suppression costs; and expedites environmental review under the Healthy Forest Restoration Act, among other things.¹⁰² Though ending fire borrowing will undoubtedly free up funds for management and prevention activities, the actual cost of fighting current and future fires as well as the restoration of the burned lands will likely not be met by limited funds from a budget cap adjustment.

Budgetary concerns also impact the review and processing of forest management plans. The Forest Service has noted that it has an extensive backlog of forest management plans that require revisions.¹⁰³ Overall, Land Management Planning has seen a sixty-four percent reduction in funding.¹⁰⁴ Updated management plans are critical “for identifying, prioritizing, and implementing the programs and projects that move an NFS unit toward achieving desired conditions,” which in turn reduces fire risk.¹⁰⁵ This backlog in planning will add to the costs that will need to be covered if the management and fire-fighting budgets are to return to equilibrium. As fire costs become more exorbitant, the government has attempted to recoup greater damages in recent lawsuits.¹⁰⁶ A statutory structure for recovering damages would not only enforce the new public policy set forth by the WBRFMA, but it would provide a uniform rule both the government and potential responsible parties could rely on for finality and expedited restoration.

¹⁰¹ *Id.*

¹⁰² *Id.*

¹⁰³ U.S. DEP’T OF AGRIC., *supra* note 3, at 14.

¹⁰⁴ *Id.* Under NFMA, the Forest Service is required to have Land Management Plans for each National Forest site that are formally revised every 10–15 years. *Id.*

¹⁰⁵ *Id.*

¹⁰⁶ The largest settlements have come from the Storrie Fire, the Copper Fire, and the Moonlight Fire. *United States v. Union Pac. R.R. Co.*, 565 F. Supp. 2d 1136, 1144 (E.D. Cal. 2008); *United States v. CB & I Constructors, Inc.*, 685 F.3d 827 (9th Cir. 2012); *Moonlight Fire Litigation*, DOWNEY BRAND LLP, <http://www.downeybrand.com/Our-Work/Moonlight-Fire-Litigation> (last visited Feb. 14, 2018).

B. Legal Changes in California

With climate change and resulting severe weather compounding a five-year drought, it seems as though California is constantly burning. The *Blue Cut Fire*, though only ranked the twentieth most destructive fire in California state history, destroyed an estimated 105 homes, 213 other structures, and caused a mandatory evacuation of 82,000 residents before it was fully contained.¹⁰⁷ At least five other fires were still burning at the time it was extinguished. California Fire Captain Lucas Spelman observed, “[i]t’s almost like the mountains are just doused in gasoline . . . [t]he brush is just burning at a rate that is incredible.”¹⁰⁸ Officials worried that peak of season in September would only bring more intense fires.¹⁰⁹

In September 2012, California Governor Jerry Brown signed into law A.B. 1492, which purports to prevent unreasonable damage claims by government agencies in wildfire lawsuits.¹¹⁰ The bill specifies that when a public agency files an action to recover damages caused by a fire, pecuniary damages “must be quantifiable and not unreasonable in relation to the prefire fair market value of the property, *taking into consideration the ecological and environmental value of the property to the public.*”¹¹¹ This could be read as no change at all in existing law, since damages must always be quantifiable and reasonable. A new release from the Governor’s office notes, however, that A.B. 1492 gives a boost to the State’s timber industry by stopping state and federal government agencies from seeking unlimited environmental penalties against companies

¹⁰⁷ Hailey Branson-Potts, *Destructive Blue Cut Fire is Fully Contained*, L.A. TIMES, Aug. 23, 2016, <http://www.latimes.com/local/california/la-me-updates-wildfire-season-destructive-blue-cut-fire-is-fully-1471981477-htmstory.html>.

¹⁰⁸ Hailey Branson-Potts, *Hearst Castle Remains Closed as Chimney Blaze Vexes Firefighters*, L.A. TIMES, AUG. 23, 2016, <http://www.latimes.com/local/california/la-me-updates-wildfire-season-hearst-castle-remains-closed-as-chimney-1471982720-htmstory.html>.

¹⁰⁹ See Priya Krishnakumar & Joe Fox, *Why the 2017 Fire Season has Been One of California’s Worst*, L.A. TIMES (Oct. 13, 2017), <http://www.latimes.com/projects/la-me-california-fire-seasons/>; Claudia Geib, *This Could Be The West’s Worst Fire Season Ever*, FUTURISM (Sept. 21, 2017), <https://futurism.com/this-could-be-the-west-s-worst-fire-season-ever/>.

¹¹⁰ *Collaboration and Compromise Lead to Signing of AB 1492*, CAL. FORESTRY ASSOC. (Sept. 19, 2012), <http://calforests.org/collaboration-and-compromise-lead-to-signing-of-ab-1492/>.

¹¹¹ CAL. HEALTH & SAFETY CODE § 13009.2(a) (West 2018) (emphasis added); Linkert, *supra* note 31, at 17.

for wildfire damage.¹¹² One catalyst for this legislation was the significant victory for the federal government in *United States v. CB & I Constructors, Inc.*, where the Ninth Circuit ruled that it could collect intangible environmental damages under California law, backing a jury's nearly \$29 million award.¹¹³ However, it is unclear whether the final language in the statute changed the law in any material respect.

The rhetoric surrounding the new law clearly purports to restrict both California and U.S. agencies from seeking some intangible damages in wildfire cases, but it remains unclear whether the state legislature can limit natural resource damages available to the United States and, if so, under which circumstances.¹¹⁴ A comprehensive statute would certainly provide clarity in such situations. Often times, wildfires do not abide by arbitrary state lines; they burn where they are wont to and as such, can incur liability in multiple jurisdictions. A federal statute would dictate when, how, and where liability is applied.

III

TRADITIONAL ENVIRONMENTAL STATUTORY STRUCTURES AND A POSSIBLE WILDFIRE STATUTE

A. Natural Resource Trustees

Traditional common law dictates that the atmosphere, oceans, estuaries, forests, rivers, as well as plant and animal species are public trust resources protected by a sovereign or government for the benefit of all citizens. As such, state and federal laws have been enacted to further this end. The most prominent federal statutes containing provisions establishing management agencies as trustees of natural resources are CERCLA,¹¹⁵ OPA,¹¹⁶ and the National Marine Sanctuaries Act (NMSA).¹¹⁷ These Acts call on the President and

¹¹² Office of Governor Edmund G. Brown Jr., *Governor Brown Signs Bipartisan Legislation to Protect Jobs and Boost California's Timber Industry*, CA.GOV (Sept. 11, 2012), <https://www.gov.ca.gov/2012/09/11/news17716/>.

¹¹³ See *supra* text accompanying note 70.

¹¹⁴ Allan Kanner, *The Public Trust Doctrine, Parens Patriae, and the Attorney General as the Guardian of the State's Natural Resources*, 16 DUKE ENVTL. L. & POL'Y F. 57, 80 (2005); *Nat'l Audubon Soc'y v. Superior Court*, 189 Cal. Rptr. 346, 355 (Cal. 1983).

¹¹⁵ Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) 42 U.S.C.A. § 9607(f) (West 2018) (effective Jan. 11, 2002).

¹¹⁶ Oil Pollution Act (OPA), 33 U.S.C.A. § 2702(b)(2)(A) (West 2018).

¹¹⁷ National Marine Sanctuaries Act (NMSA), 16 U.S.C.A. § 1443(c)(1) (West 2018).

state governors to designate officials to serve as trustees for natural resources on behalf of the public.¹¹⁸

In the event of an environmental disaster, the natural resource trustees are charged with completing a NRDA.¹¹⁹ The trustee's primary tasks during the NRDA process are (1) determining whether a natural resource, including particular species, have been injured; (2) determining the extent of the injury in terms of the benefits that the resource would have provided but for the disaster and establishing baseline conditions, estimating recovery periods, and measuring the degree benefits lost; and (3) calculating the appropriate compensation for interim loss and determining the cost for restoration of the resource or replacement if restoration is not possible.¹²⁰ One such method of calculation is HEA, which is why when tasked with determining damages in the wildfire context, some experts have relied on this widely accepted method, that has been codified in environmental regulations.¹²¹

B. Habitat Equivalency Analysis

Jurors or judges as finders of fact can rarely render a verdict to turn back time and put the victim of harm in the position he or she would have been in but for the injury-causing wrong. In most tort cases, juries can only award money damages, generally valuing damaged commodities priced on a market-based system. In the majority of cases, this approach is consistent with conventionally accepted notions of justice. However, the law has recognized some exceptions, including sentimental goods such as a cherished family pet or ornamental trees.¹²² Such exceptions exist because it is extremely difficult to assign a monetary value to Buddy, the golden retriever.¹²³

¹¹⁸ Kanner, *supra* note 17, at 376.

¹¹⁹ *Id.*

¹²⁰ See Kanner & Nagy, *supra* note 81, at 420–22.

¹²¹ Restoration selection—developing restoration alternatives, 15 C.F.R. § 990.53 (2018).

¹²² *Barrios v. Safeway Ins. Co.*, 97 So. 3d 1019, 1023–24 (La. Ct. App. 2012) (finding that a dog that had been killed was extremely valuable to the owners and the loss caused the owners to suffer psychic trauma); *Huber v. Serpico*, 176 A.2d 805, 812 (N.J. Super. Ct. App. Div. 1962) (finding that it is appropriate to instruct a jury to determine whether or not trees that were cut down possessed shade or aesthetic value or only timber value).

¹²³ Direct market price analysis is, on occasion, an appropriate technique to assess the use value of natural resources. It is best used when the good or service in question is commonly traded in the open market and can be considered the total value of the good,

Likewise, it is often difficult to express the monetary value of the services that ecosystems provide not only to the human population, but also to the flora, fauna, and global function in general. A forest, for example, provides services to the timber company that cuts and sells its trees, to the scientist that uses its plants and fungi for medicinal research, to the public trustee that holds its ecological value in trust for the citizens of the country, and to the public itself that hikes on its trails and enjoys connecting with nature. But the forest also sustains an entire ecosystem of plants and animals, bugs and microbes, and on a more expansive level, helps to reduce greenhouse gas emissions by acting as a carbon sink,¹²⁴ which is not a direct human use. It is no wonder that calculating precise damages in environmental damages cases is often contentious. A focus on real restoration, as opposed to itemizing, then quantifying lost ecological services, is more determinate and straightforward.¹²⁵

As noted above, the primary goal of environmental statutes and the NRDA process is restoration. To restore a forest to its prefire condition, a trustee would have to account for all of the uses mentioned above. The trustee would also have to realize that simply using the monetary value of timber may not actually restore those things. The National Research Council explains this nuanced restoration well:

In restoration, ecological damage to the resource is repaired. Both the structure and the functions of the ecosystem are recreated. Merely recreating the form without the functions, or the functions in an artificial configuration bearing little resemblance to a natural resource, does not constitute restoration. The goal is to emulate a natural, functioning self-regulating system that is integrated with the ecological landscape in which it occurs.¹²⁶

For this reason, HEA is the best option for attempting to value these services so that the optimal restoration of the forest system may

and if there are no important external effects in its production or consumption. That is, the price is generated through purchase behavior and price equals value. This is true of timber in many cases. But a forest is a habitat with additional ecological and environmental value.

¹²⁴ Melanie Friedel, *Forests as Carbon Sinks*, AM. FORESTS (July 18, 2017), <http://www.americanforests.org/blog/forests-carbon-sinks/>.

¹²⁵ See generally Kanner, *supra* note 17; see also Robert E. Unsworth & Richard C. Bishop, *Assessing Natural Resource Damages Using Environmental Annuities*, 11 ECOLOGICAL ECON. 35 (1994).

¹²⁶ NAT'L RES. COUNCIL, RESTORATION OF AQUATIC ECOSYSTEMS: SCIENCE, TECHNOLOGY AND PUBLIC POLICY 18 (1992), <https://www.nap.edu/read/1807/chapter/3#15>.

be achieved. A relatively recent publication addressing HEA and its application to wildfire notes that “the ecological service metric is the most important input parameter in an HEA application because it forms the basis for all injury and restoration calculations.”¹²⁷ To apply the next steps, services identification is crucial.

Equivalency analysis is the idea that you should replace an injured resource or habitat with one of like kind and quality.¹²⁸ This also includes interim losses of use between the initial injury and ultimate restoration.¹²⁹ To avoid problems of having to monetize lost resources or services, ecological economists developed HEA to “compare the natural resource services produced by habitat or resource-based restoration actions to natural resource service losses.”¹³⁰ HEA, therefore, is a computational method for determining the compensatory restoration required to offset injury to the ecological habitat. In its application, monetary value is removed from the scaling calculations in favor of focusing on natural resources and their associated services.

The principles and practice of equivalency analysis, specifically habitat equivalency analysis, were originally developed in the early 1990s by federal resource trustees.¹³¹ The theoretical basis for HEA was originally published in scientific journals devoted to resource economics.¹³² HEA started as “environmental annuities” in a 1994 article by Robert Unsworth and Richard Bishop.¹³³ The idea was to replace lost habitat—in that case, wetlands—with new habitat as adjusted for the interim loss and the differential in ecological services provided by the pre-pollution habitat and newly created habitat.¹³⁴ National Oceanic and Atmospheric Administration (NOAA) guidance dating from the mid-1990s recommends such restoration-based

¹²⁷ David A. Hanson et al., *Adapting Habitat Equivalency Analysis (HEA) to Assess Environmental Loss and Compensatory Restoration Following Severe Forest Fires*, 294 *FOREST ECOLOGY & MGMT.* 166, 168 (2013).

¹²⁸ See Joan P. Snyder & William H. Desvousges, *Habitat and Resource Equivalency Analyses in Resource Compensation and Restoration Decision Making*, 28 *NAT'L. RESOURCES & ENV'T* 3, 3 (2013).

¹²⁹ See 15 C.F.R. § 990.53(c)(1) (2018).

¹³⁰ 43 C.F.R. § 11.83(c) (2018).

¹³¹ Brian Roach & William W. Wade, *Policy Evaluation of Natural Resource Injuries Using Habitat Equivalency Analysis*, 58 *ECOLOGICAL ECON.* 421, 422–23 (2006).

¹³² See generally Unsworth & Bishop, *supra* note 125.

¹³³ See *id.*

¹³⁴ *Id.* at 35–36.

assessments using HEA as the best methods to quantify damages in claims filed under OPA.¹³⁵ HEA gained judicial recognition in 1999 when it was challenged under the *Daubert* standard for the admission of expert testimony.¹³⁶ The court in *United States v. Great Lakes Dredge & Dock Co.* recognized HEA as an acceptable methodology, finding as follows:

First, the HEA is not a scientific technique or principle that is subject to testing in the traditional sense. Rather, it is a mathematical equation that works, as any other, subject to the limitations of the data input into the equation. Even Great Lakes' own expert testified that the HEA is a valid methodology.

Second, in spite of Great Lakes['] repeated arguments to the contrary, the HEA, as it was used in this case, has been subject to peer review and has been accepted for publication. Although the HEA article has not yet been published, at which time it will be subject to further scrutiny and peer review, it did undergo significant scrutiny prior to its acceptance for publication.

Third, [b]ecause the HEA is limited by its data, questions about its error rate are not really applicable. In other words, the error rate is determined by errors in the data, not errors with the HEA itself.

Finally, because the HEA is a relatively new scientific model it has not had the necessary time to truly gain general acceptance beyond the government agencies Mr. Julius referred to in his testimony. Nonetheless, the relative "youth" of a scientific technique does not make it any less valid. Furthermore, the Court, as fact finder, will consider the testimony of Great Lakes' experts when evaluating the data put into the HEA. Accordingly, the testimony from Mr. Julius will not be excluded.¹³⁷

By 2007, nearly every major natural resource damages pollution case was utilizing HEA; it had "become the primary method for calculating damages from pollution events nationwide."¹³⁸

As a practical matter, HEA involves a series of steps that begin with identification of the ecosystem and affected ecosystem services.¹³⁹ The next steps involve the selection of metrics

¹³⁵ 15 C.F.R. § 990.10 (2018); NAT'L OCEANIC & ATMOSPHERIC ADMIN., HABITAT EQUIVALENCY ANALYSIS: AN OVERVIEW 4 (Mar. 21, 1995), <http://casedocuments.darr.noaa.gov/northwest/cbay/pdf/cbhy-a.pdf>.

¹³⁶ *United States v. Great Lakes Dredge & Dock Co.*, No. 97-2510-CIV, 97-10075-CIV, 1999 WL 1293469, at *1-*2 (S.D. Fla. July 28, 1999); see *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 593-94 (1993) (explaining the *Daubert* evidentiary standard).

¹³⁷ *Great Lakes Dredge & Dock Co.*, 1999 WL 1293469, at *1-*2.

¹³⁸ Matthew Zafonte & Steve Hampton, *Exploring Welfare Implications of Resource Equivalency Analysis in Natural Resource Damage Assessments*, 61 ECOLOGICAL ECON. 134, 134 (2007).

¹³⁹ See 15 C.F.R. § 990.51(c) (2018).

representing the most important ecosystem services, quantification of injuries using these metrics, and the development of equivalency models that demonstrate how alternative restoration projects offsets ecosystem losses.¹⁴⁰ HEA requires the establishment of the “debit” (i.e., the quantification of the negative impacts to the services resulting from injuries to natural resources) and the “credit” (i.e., the expected benefits and improvements from restoration).¹⁴¹ A “start year” and an “end year” must also be established for each side of the model, which indicates the date when the injury first began and when the injured resources were, or will be, returned to their fully restored condition.¹⁴²

When ecological degradation occurs, both structural integrity and functionality decline, although not necessarily in proportion to one another. As such, a newly constructed ecosystem may not be equivalent to the pre-disaster ecosystem in terms of either structure or function. Therefore, habitat-to-habitat restoration may actually require more habitat than was destroyed to fully compensate for the lost resources. A method known as “scaling” is used to account for these differences.¹⁴³ Determining the equivalency between the debit and credit is conceptually simple, and there are well accepted equations or models for scaling compensatory restoration to match ecological losses:

- a. Sum the reduction in services caused by the injury.
- b. Determine the amount and timing of improvement in services expected per unit of restoration.
- c. Divide the total losses by the benefit per restored unit to calculate the scale of the required restoration.¹⁴⁴

As the use of HEA expanded, the method was adapted to cases in which injuries were more appropriately measured in numbers of individual resources lost, such as birds or fish, rather than in solely

¹⁴⁰ §§ 990.51–.53.

¹⁴¹ STRATUS CONSULTING INC., DELIVERABLE NO. 6A: REVIEW REPORT ON RESOURCE EQUIVALENCE METHODS AND APPLICATIONS 7 (July 2007) [hereinafter REVIEW REPORT], http://www.envliability.eu/docs/RERReviewUS_D6A_Stratus_FINAL.pdf.

¹⁴² *Id.* at 8.

¹⁴³ 15 C.F.R. § 990.53(d).

¹⁴⁴ The above steps are an oversimplification of the process meant to illustrate the basic function. For a detailed explanation, see REVIEW REPORT, *supra* note 141, at 9–14.

habitat units.¹⁴⁵ In these situations, “the remediation was scaled to provide equivalent numbers of replacement individuals, on the theory that the replaced individuals would compensate for the full suite of ecological and human use services lost. This application of resource-to-resource scaling came to be called resource equivalency analysis (REA).”¹⁴⁶ REA “compare[s] the effects of restoration actions on specifically identified resources that are injured or destroyed.”¹⁴⁷ Ultimately, HEA and REA use the same methods to identify injury and restoration, but measure such observations with different units.¹⁴⁸ Under HEA, service losses are expressed in terms of habitat (e.g., acres of marsh or forest) and are offset by restoration of similar habitat.¹⁴⁹ Under REA, losses are expressed in terms of resource units (such as the number of impacted fish or birds) and are often offset by projects that restore equivalent resource units.¹⁵⁰

This type of resource-to-resource, habitat-to-habitat restoration provides several benefits over traditional models that rely on monetization of ecosystems and their services. In traditional valuation models intent on putting monetary value on a natural resource, the trustee is forced to take extra steps by valuing the resources, assessing damage, and ultimately converting the monetary value in a restoration plan.¹⁵¹ HEA, on the other hand, uses the damage assessment phase to both value natural resources and develop a restoration plan simultaneously. Professor Patrick Tolan explains:

If forced to put a dollar figure on the assessment, trustees will not monetize the costs until they have already defined all of the corrective actions. Therefore, planning is “built-in” and all that remains is the execution of the restoration plan. This benefits the environment by (1) fostering more rapid restoration, (2) enhancing

¹⁴⁵ *Id.* at 3.

¹⁴⁶ *Id.*

¹⁴⁷ 43 C.F.R. § 11.83(c)(2)(x) (2018). HEA and REA are included among seven other calculation methodologies authorized by DOI, including market price, appraisal, factor income, travel cost, unit value/benefits transfer, contingent valuation, conjoint analysis, and random utility model. These listed methods are in addition to “[o]ther methodologies that measure compensable value in accordance with the public’s willingness to pay for the lost service, or with the cost of a project that restores, replaces, or acquires services equivalent of natural resource services lost pending restoration to baseline in a cost-effective manner” § 11.83(c)(3).

¹⁴⁸ REVIEW REPORT, *supra* note 141, at 7.

¹⁴⁹ *Id.*

¹⁵⁰ *Id.*

¹⁵¹ Patrick E. Tolan, Jr., *Natural Resource Damages Under CERCLA: Failures, Lessons Learned, and Alternatives*, 38 N.M. L. REV. 409, 422 (2008).

opportunities for settlement by avoiding the obstacle of putting a dollar value on damages, and (3) affording trustees a more defensible litigation position, as Congress and the courts prefer restoration to damages.¹⁵²

HEA not only provides an ecosystem with the best chance at restoration, but it also fulfils the statutory requirement of efficiency and cost effectiveness.¹⁵³ When a wildfire decimates an entire forest ecosystem, simply paying out the price of the cut timber or even the cost of replanting—which some have suggested—¹⁵⁴ will not restore the ecosystem.

Steven Kimball, the defense attorney in the *Storrie Fire* case, suggests that damages for forest fires should only be the costs of replanting the area.¹⁵⁵ He argues that this is double recovery and:

[t]he double recovery problem disappears if damages for lost timber—both merchantable and nonmerchantable—are based only on replanting costs. Under this scenario, the United States does not receive monetary damages as if it would have sold the timber at some point in the future, which would have resulted in a clear-cut area in which trees needed to be replanted and a period of lost habitat while the trees grew to their former size. Rather, the government is compensated for the costs incurred in reforestation and for the loss of habitat during the reforestation period. Allowing recovery of both restoration and HEA-based environmental damages would make the United States whole in a manner that does not rely on the fiction of a future timber sale and avoids double recovery.¹⁵⁶

However, HEA requires much more than simply replanting the destroyed timber. It may require new soil to be deposited; it may require more acreage than was actually damaged in order to amount to the same level of services. HEA ensures that a proper analysis of the ecosystem as a whole is done and the needed equivalents in damages identified.

¹⁵² *Id.*

¹⁵³ Oil Pollution Act (OPA), 15 C.F.R. § 990.10 (2018); Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 43 C.F.R. § 11.13(a) (2018).

¹⁵⁴ Kimball, *supra* note 30, at 38.

¹⁵⁵ *Id.*

¹⁵⁶ *Id.* at 45.

C. Suggestions for Adopting a Statute for Wildfire Damages

Prior to the *Exxon Valdez* oil spill in 1989, Congress had attempted to revise oil spill law to little or no avail as there was a stalemate between shipping, oil and gas, and environmentalist interests.¹⁵⁷ The disaster off the coast of Alaska was the proverbial straw that broke the camel's back, allowing Congress to push through political deadlock and adopt a sweeping statute that was to "replace the prior 'fragmented collection of Federal and State laws' with a 'single Federal law providing cleanup authority, penalties, and liability for oil pollution.'"¹⁵⁸ It is an elegant scheme that is designed to work with a command and control regulatory program while subjecting industry actors to the polluter pays principle through criminal and civil penalties. This shifts the burden of environmental cleanup from the public to the offending private sector actor.¹⁵⁹ It allows for both governmental and private recovery and incentivizes industry actors to take the utmost care in spill prevention, but in the event that a spill does occur, provides a limit of liability, allowing the industry to continue thriving.

There is no reason that a similar approach would not aid in restoring forest ecosystems after large wildfires. As noted above, the vast majority of the *Storrie Fire* settlement is still sitting in government coffers as bureaucrats debate the best way to handle restoration. If the Forest Service and Department of Agriculture were equipped with a statutory process similar to OPA and its accompanying regulations, federal and state trustees would be forced to work through the restoration planning phase from the outset, developing a restoration plan and having a governance structure in place for implementing said plan in a timely fashion. The Forest Service and its National Forest Service units already manage programs that are critical in forest restoration post-wildfire. The Forest Service's 2015 report notes that "[t]he Vegetation and

¹⁵⁷ See *Hearing to receive testimony on the liability and financial responsibility issues related to offshore oil production, including the Deepwater Horizon accident in the Gulf of Mexico, including S. 3346, a bill to increase the civil and criminal penalties on liability under the Outer Continental Shelf Lands Act Before the S. Comm. on Energy and Nat. Res.*, 111th Cong. 1 (2010) (testimony of Jonathan Ramseur, Specialist in Environmental Policy, Cong. Research Serv.).

¹⁵⁸ John J. Costonis, *The BP BI Bundle Ruling: Federal Statutory Displacement of General Maritime Law (Part I)*, 44 ENVTL. L. REP. NEWS & ANALYSIS 10022, 10029 (2014).

¹⁵⁹ *Id.* at 10030.

Watershed Management Program is the cornerstone for forest, rangeland, soil[,] and water restoration and enhancement activities on National Forest System lands and plays a key role in post-fire restoration.”¹⁶⁰ The program not only improves water quality and quantity and the health of the forest, it also serves to reduce fire risks.¹⁶¹ The previously mentioned Land Management Planning program mandated by the National Forest Management Act would be invaluable in establishing restoration plans and goals. Both of these programs could be built into regulations promulgated by the Department of Agriculture or Forest Service at the behest of a wildfire statute. This would ensure that settlements like that of the *Storrie Fire* are expeditiously applied to restoration rather than kept in government accounts where funds are not put to use. The existing forest management programs would provide a starting point for all initial response and for later restoration efforts. Because there are already such extensive mechanisms, albeit underfunded, to study and help restore forest ecosystems, drafting a successful, comprehensive wildfire statute to include a natural resource damage assessment process that incorporated the use of HEA would not be inconceivable.

1. Elements of Liability

The most effective and significant feature of OPA is its strict liability scheme.¹⁶² OPA implements a strict liability scheme that only provides for three limited defenses to liability, which include an act of God, an act of war, or an act or omission of a third party.¹⁶³ Such a liability structure ensures that the polluter, and not the public, pays for

¹⁶⁰ U.S. DEP’T OF AGRIC., *supra* note 3, at 8. It should be noted that the Vegetation and Watershed Management Program, despite its importance, is included in the many programs that are underfunded and have faced increasing budget cuts.

¹⁶¹ *Id.* at 9.

¹⁶² OPA also provides for joint and several liability. Often in the case of oil spills there are multiple responsible parties. Congress sought to eliminate the inevitable finger pointing by including the joint and several liability structures as well as avenues for later contribution actions in order to expedite cleanup and restoration efforts. E.Donald Elliot & Mary Beth Houlihan, *A Primer on the Law of Oil Spills*, ALI-ABA ADVANCED ENVTL. L. CONF., 5 (2010), <http://ssrn.com/abstract=2007604>. In the case of wildfires, it is not likely that there will be multiple responsible parties, but it would be prudent to provide for contribution actions all the same.

¹⁶³ 33 U.S.C.A. § 2703(a) (West 2018). The omission will absolve liability only if the responsible party can establish that he took due care with regard to the oil and took all precautions against foreseeable acts or omissions of said third party. *Id.* §§ 2703(a)(3)(A)–(B).

the pollution (also known as the “polluter pays principle,” a key policy driver behind the statute).¹⁶⁴ Wildfire law would benefit from a similarly strict statute holding industry actors wholly accountable for their negligence in forest operations and other activities within a forest. Such a construction will ensure that industry is properly incentivized to prevent forest fires by adhering to the highest fire prevention best practices and strategies.

Under OPA, any party responsible for a vessel or facility that releases or poses a substantial threat of releasing oil into the navigable waters of the United States is liable for “the removal costs and damages specified in subsection (b) that result from such incident.”¹⁶⁵ Subsection (b) lists recoverable costs and damages, which include removal costs, natural resource damages, real or personal property losses, subsistence use, revenues, profits and earning capacity, and public services.¹⁶⁶ Importantly, the term “incident” encompasses the actions that lead up to the discharge or threatened discharge of oil.¹⁶⁷ If applied in the context of a wildfire, this strict liability could include the negligent actions of the defendant leading up to a fire, including failure to remove dry brush, failure to properly use heavy equipment, or failure to practice recommended fire prevention techniques, among other things. Fires that result from such accidents would trigger strict liability on the part of the responsible party, who would be liable for the restoration costs and damages.

¹⁶⁴ OPA’s strict liability regime is the embodiment of the Polluter Pays Principle. The Organisation for Economic Co-Operative Development (OECD) defines the “Polluter Pays Principle.” It states that:

[t]he principle to be used for allocating costs of pollution prevention and control measures to encourage rational use of scarce environmental resources and to avoid distortions in international trade and investment is the so-called “Polluter-Pays Principle.” This principle means that the polluter should bear the expenses of carrying out the above-mentioned measures decided by public authorities to ensure that the environment is in an acceptable state.

Jonathan Remy Nash, *Too Much Market? Conflict Between Tradable Pollution Allowances and the “Polluter Pays” Principle*, 24 HARV. ENVTL. L. REV. 465, 468–70 (2000) (quoting OECD, *Environment and Economics: Guiding Principles Concerning International Economic Aspects of Environmental Policies*, May 26, 1972, annex para. 1, Doc. No. C(72)128, 1972 WL 24710).

¹⁶⁵ 33 U.S.C.A. § 2702 (West 2018).

¹⁶⁶ *Id.* § 2702(b).

¹⁶⁷ *Id.* § 2701(14) (defining “incident” as “any occurrence or series of occurrences having the same origin, involving one or more vessels, facilities, or any combination thereof, resulting in the discharge or substantial threat of discharge of oil[.]”).

Despite being a strict liability statute, OPA recognizes the incredible financial burden that oil spills incur and, as such, provides for limits to liability for most responsible parties.¹⁶⁸ The limit on liability would be even more prudent in a comprehensive wildfire statute given the financial statuses of many would-be responsible parties. As Linkert noted, companies are extremely concerned with huge damage claims akin to those in the *Storrie* and *Moonlight Fires* that he termed an “economic death penalty.”¹⁶⁹ However, high damages deter companies from causing natural resource damages as it is cheaper to take precautionary steps rather than face litigation and/or settlement for exponentially higher figures. Nevertheless, Congress may seek to limit liability in any possible wildfire statute. OPA provides an example of such limitation.

Under OPA, the limit to liability does not apply if it can be shown that a responsible party’s actions were grossly negligent, due to willful misconduct, or in violation of federal safety, construction or operating regulations.¹⁷⁰ If a responsible party is simply found to be negligent, its liability is determined by the size of the vessel, specifically tonnage and hull construction, from which oil was discharged.¹⁷¹ Because wildfires are not started by large vessels, but rather often by small sparks from construction equipment or power lines,¹⁷² wildfire liability would need to be limited based on some other factor. Possible candidates include acres of forested area held, extent of contract with the federal government for logging purposes, gross annual profits, or the extent of operations on or adjacent to public lands. A fee schedule could be developed to account for the number of acres akin to the tonnage calculations contemplated by OPA.¹⁷³

¹⁶⁸ *Id.* § 2704.

¹⁶⁹ Linkert, *supra* note 31, at 4.

¹⁷⁰ 33 U.S.C.A. § 2704(c).

¹⁷¹ *Id.* § 2704 (a).

¹⁷² Brittny Mejia & Paige St. John, *Witnesses Saw Snapped, Sparking Power Line at Start of Destructive L.A. Wildfire*, L.A. TIMES, Dec. 13, 2017, <http://www.latimes.com/local/lanow/la-me-fire-cause-creek-fire-20171213-story.html>.

¹⁷³ Under § 2704(a), liability is determined by hull construction and tonnage. § 2704(a). Companies are incentivized to retrofit old vessels with double hulls in order to take advantage of the \$1900 per ton as opposed to the \$3000 per ton for only single hull or double side or bottom only vessels. *Id.* For vessels that exceed 3000 tons, the damage schedule increases dramatically per each type of vessel. *Id.* Finally, for those small, appropriately fitted vessels, liability is capped at a total of \$800,000 or \$950 per ton, whichever is greater. *Id.* Offshore facility liability is capped at the total of all removal

In the event that a responsible party is found liable, it would be prudent to develop alternative ways for such responsible parties to meet the damages burden in addition to possible limits to liability. Offsets and creative payment schemes would greatly alleviate the burden felt by industry working in and around forests and the wildland-urban interface. It would behoove the government to remember its financial difficulties in the forest management sector and strive to work with, rather than against, industry.

The *Moonlight Fire* provides an excellent example of a creative way in which the federal government may recover costs without financially destroying the responsible party. The settlement agreement in that case included payment of \$55 million as well as Sierra Pacific transferring title of 22,500 acres of its property.¹⁷⁴ Though the 22,500 acres cannot be picked up and moved, it could offset lost use damages calculated in the HEA. Trustees that are working on HEAs following wildfires should strive in settlements to work with the companies to determine if an arrangement such as this would be feasible and adequate to fully compensate for interim ecosystem service losses. Coordination with industry throughout the entire range of forest management processes to wildfire response can and should be used to reduce the financial burden of the federal government.

A contract program such as that envisioned by the HFRA would enable government to implement hazard reduction programs with little expense to the public while creating more opportunities for logging operations to stimulate the timber industry. Currently, the HFRA aims “to reduce wildfire risk to communities, municipal water supplies, and other at-risk Federal land through a collaborative process of planning, prioritizing, and implementing hazardous fuel reduction projects.”¹⁷⁵ As noted previously, it streamlines the process by which the Forest Service can get management plans approved under the federal environmental statutes, including NEPA and the ESA.¹⁷⁶ It also provides avenues for the federal government to work with industry to manage forests in areas that they have the funding or man power to oversee.¹⁷⁷ However, this partnership program has been

costs plus \$75,000,000. *Id.* Onshore facility and deepwater port liability is capped at \$350,000,000. *Id.*

¹⁷⁴ *Moonlight Fire Litigation*, *supra* note 78.

¹⁷⁵ 16 U.S.C.A. § 6501(1) (West 2018).

¹⁷⁶ See Keiter, *supra* note 4, at 312, and text accompanying *supra* note 95.

¹⁷⁷ See Keiter *supra* note 4, at 312–13.

criticized as incentivizing the cutting of old growth trees in areas where industry is aiding in management.¹⁷⁸

In order to supplement low funding, both the Forest Service and the Bureau of Land Management have the authority to enter into “stewardship contracts,” in order to meet management goals.¹⁷⁹ The contracts may not exceed ten years and are awarded on “best-value basis.”¹⁸⁰ In such contracts “the value of timber and other forest products is applied as an offset against the cost of services received.”¹⁸¹ Critics, including government representatives, have raised concerns that the industry will take, or indeed are owed, the large trees that generally *protect* forests from devastating fires.¹⁸² Further still, the processes of cutting and shipping timber create more fire hazards if not done properly.¹⁸³

As part of an updated contract program, to allay fears of critics, it would be prudent for the Forest Service to devise specific plans within a stewardship contract that prevents companies from taking advantage of the perceived logging loophole. Further still, the program should be expanded to include, or even require, participation in the wildland-urban interface, which has significantly smaller trees but poses a significant threat to the public. Once the proper management plans are devised, participation in such programs could act as an offset for liability in the event of a wildfire.¹⁸⁴

¹⁷⁸ Reda M. Dennis-Parks, *Healthy Forests Restoration Act—Will it Really Protect Homes and Communities?*, 31 *ECOLOGICAL L.Q.* 639, 654–55 (2004).

¹⁷⁹ *Stewardship Contracting Fact Sheet*, U.S. DEP’T OF AGRIC., U.S. FOREST SERV., <http://www.fs.fed.us/restoration/documents/stewardship/guidance/FSfactStewardshipContracting03.pdf> (last visited Feb. 7, 2018).

¹⁸⁰ *Id.*

¹⁸¹ *Id.*

¹⁸² Dennis-Parks, *supra* note 178, at 653. One commenter calls this the logging loophole by which timber companies are allowed to remove large, old growth trees with little to no oversight for free. *Id.* She indicates that it creates more deadfall, or the accumulation of leaves, needles and branches during the cutting process that creates more fuel for fire, incentivizes cutting larger trees that generally protect the forest, and ignores the areas closer to wildland-urban interfaces with smaller trees and vegetation which is generally more prone to fire. *Id.* at 653–54.

¹⁸³ *Id.* at 654.

¹⁸⁴ Notably, because companies would be operating under government contracts in the hazard reduction program, it is likely that there are hold harmless clauses that would immunize them from lawsuits instigated by the government. However, most of these companies likely have operations in other parts of the country. In the event that a fire was started in one of these areas, participation in the stewardship contract program could mitigate liability. Such a set up would not only incentivize safe practices in all logging

A program that has proved successful in many environmental contexts is the development of mitigation banks. For example, in Louisiana, developers who wish to develop areas inside the Coastal Zone must select and participate in a compensatory mitigation program enumerated by the Louisiana Department of Natural Resources.¹⁸⁵ The selected program must be included in the developer's Coastal Use Permit.¹⁸⁶ Louisiana provides a succinct definition of typical mitigation programs: “[m]itigation is all actions taken to avoid, minimize, restore, and compensate for loss of ecological value due to an activity.”¹⁸⁷ It goes on to define compensatory mitigation as: “[r]eplacement, substitution, enhancement, or protection of ecological values to offset anticipated losses of ecological value caused by a permitted activity.”¹⁸⁸

The EPA has also provided for mitigation banks under section 404 of the Clean Water Act.¹⁸⁹ It considers a mitigation bank to be any “wetland, stream, or other aquatic resource area that has been restored, established, enhanced, or (in certain circumstances) preserved for the purposes of providing compensation for unavoidable impacts to aquatic resources.”¹⁹⁰ Importantly, both programs exist under a command and control permitting regime and are tied to permits.

Such mitigation banks could be used in both a permitting and damage calculation context in wildfire damages. As noted above, companies can participate in forest management under HFRA. The inverse could be established: that is, allow companies to pay to replant burned or already logged areas and “bank” the credits, likely in the form of acres, to offset some of the damages done by a negligently caused wildfire. The EPA considers the value of a mitigation bank to be “compensatory mitigation credits.”¹⁹¹ The instrument detailing the agreement between the bank owners,

operations, but it would also incentivize participation in the program to help offset the costs of forest management.

¹⁸⁵ *Compensatory Mitigation in the Louisiana Coastal Zone*, STATE OF LA. DEP'T OF NAT. RESOURCES, OFF. OF COASTAL MGMT., <http://www.dnr.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=95> (last visited Feb. 14, 2018).

¹⁸⁶ *Id.*

¹⁸⁷ *Id.*

¹⁸⁸ *Id.*

¹⁸⁹ *Mitigation Banking Factsheet*, U.S. ENVTL. PROTECTION AGENCY, <https://www.epa.gov/cwa-404/mitigation-banking-factsheet> (last visited Feb. 14, 2018).

¹⁹⁰ *Id.*

¹⁹¹ *Id.*

generally a third party that will oversee and manage the bank property, will disclose “the number of credits available for sale and requires the use of ecological assessment techniques to certify that those credits provide the required ecological functions.”¹⁹² This is similar to HEA’s habitat-to-habitat equivalency analysis, and as such, would work well in a calculation of wildfire damages under the proposed wildfire statute. Such a mitigation scheme could be included on permits for logging federally held land, as well as an option for companies to pursue following a large wildfire. In this way, states and the federal government will be able to recoup costs incurred in wildfire management in the form of restored habitat and actual money. Moreover, companies that may have been crushed under the burden of a large damages verdict or settlement have a less expensive, but nearly equivalent restoration impact. Proactive participation in a mitigation program not only benefits the company in the event of a negligent wildfire, but it also aids the Forest Service in restoration of already burned land.¹⁹³

2. *Damages and Restoration*

Like all successful environmental statutes, the goal of a comprehensive wildfire statute should be restoration of the ecosystem, not simply restoration of the market valued goods such as timber. In recent years, HEA has been the method of choice when determining injury, damages, and a restoration plan for purposes of OPA and CERCLA.¹⁹⁴ Scholars have highlighted the importance of considering and formulating restoration plans from the outset of an injury assessment, noting that it fosters more rapid restoration (critical to maintaining the public trust); it encourages settlement because it

¹⁹² *Id.*

¹⁹³ Compulsory participation in a mitigation program in the logging context would be akin to the polluter pays principle, essentially building in a bank to rely on in the event of a wildfire. To those that would be concerned that companies participating in such programs may have less incentive to take all possible precaution when operating in forested areas, the strict liability of the statute will still operate the same. They will still be responsible without question for the damages caused but may have some monetary relief through planting bank offsets.

¹⁹⁴ *See* Ohio v. United States Dep’t of the Interior, 880 F.2d 432 (D.C. Cir. 1989). The court clarified that “Congress established a distinct preference for restoration cost as the measure of recovery in natural resource damage cases.” *Id.* at 441. The court distinctly rejected DOI’s “lesser of” rule that had been in place. *Id.* For an extensive explanation of the resultant regulation revisions, see Allan Kanner, *Issues Trustees Face in Natural Resource Damage Assessments, Part I*, 8 J. ENVTL PROTECTION 503, 505 (2017).

avoids placing a dollar value on resources; and it gives a natural resource trustee a more defensible position in litigation, especially if they comply with regulations, which under OPA, grants the trustee a rebuttable presumption in a court of law.¹⁹⁵

OPA provides in section 2706(e)(2) that:

Any determination or assessment of damages to natural resources for the purposes of this Act made under subsection (d) by a Federal, State, or Indian trustee in accordance with the regulations promulgated under paragraph (1) shall have the force and effect of a rebuttable presumption on behalf of the trustee in any administrative or judicial proceeding under this Act.¹⁹⁶

OPA directs NOAA to adopt regulations for the assessment of natural resource damages under section 2702(b)(2)(A).¹⁹⁷ By 2008 NOAA had codified HEA in its OPA regulations.¹⁹⁸

The intent of OPA “is to make the environment and public whole for injuries to natural resources” by restoring natural resources harmed from the date of the incident until recovery.¹⁹⁹ The NOAA regulations define *Restoration* as:

[A]ny action (or alternative), or combination of actions (or alternatives), to restore, rehabilitate, replace, or acquire the equivalent of injured natural resources and services. Restoration includes:

(a) *Primary restoration*, which is any action, including natural recovery, that returns injured natural resources and services to baseline; and

(b) *Compensatory restoration*, which is any action taken to compensate for interim losses of natural resources and services that occur from the date of the incident until recovery.²⁰⁰

As provided for in the NOAA regulations, the trustee selects an approach for primary restoration.²⁰¹ The selection process, which assigns broad discretion to trustees, should consider a natural recovery option, as well as active primary restoration actions, which includes viable alternatives to their preferred method.²⁰² The ultimate

¹⁹⁵ See Kanner, *supra* note 17.

¹⁹⁶ 33 U.S.C.A. § 2706(e)(2) (West 2018).

¹⁹⁷ *Id.* § 2706(e)(1).

¹⁹⁸ See 15 C.F.R. § 990 (2018).

¹⁹⁹ 15 C.F.R. § 990.10 (2018).

²⁰⁰ *Id.* § 990.30 (emphasis added).

²⁰¹ *Id.* §§ 990.42(a)(3), .53(b) (2018).

²⁰² *Id.* § 990.53(b)(2).

goal is restoration to baseline conditions.²⁰³ Following primary restoration, the trustee must then consider compensatory restoration measures.²⁰⁴ The quantification of interim losses, conditional on implementation of primary restoration, becomes an input into the analysis of compensatory restoration actions.²⁰⁵ Compensatory restoration is necessary to compensate for the interim loss of natural resources/services from the time of injury until full recovery.²⁰⁶

Like OPA, CERCLA has accompanying regulations that lay out the parameters of detailed injury and damage assessments, otherwise known as Type B procedures, in 43 C.F.R. § 11.60. An assessment performed pursuant to the regulations would begin with the trustee determining the “physical, chemical, and biological baseline conditions and the associated baseline services for injured resources at the assessment area,”²⁰⁷ and comparing those to “the extent to which natural resource services have been reduced as a result of the injuries.”²⁰⁸ After detailing the manner in which resource recoverability; a restoration and compensation determination plan; and alternatives to restoration, rehabilitation, replacement and/or acquisition of equivalent resources would be identified and determined, the regulations set forth the types of cost estimate and valuation methodologies that may be used. Such methodologies include HEA. It enumerates methods for determining:

The costs of the selected alternative for (i) the restoration or rehabilitation of the injured natural resources to a condition where they can provide the level of services available at baseline, or (ii) the replacement and/or acquisition of equivalent natural resources capable of providing such services; and the compensable value of the services lost to the public through the completion of the baseline restoration, rehabilitation, replacement, and/or acquisition of equivalent natural resources.²⁰⁹

Notably, a trustee is not required to select one of the listed methodologies as the regulations under both CERCLA and OPA are not mandatory, but mere guidance.²¹⁰ However, if they choose to

²⁰³ *Id.*

²⁰⁴ *Id.* § 990.53(c).

²⁰⁵ *Id.* § 990.53(c)(2).

²⁰⁶ *Id.* § 990.30.

²⁰⁷ 43 C.F.R. § 11.72(a) (2018).

²⁰⁸ *Id.* § 11.71(a)(1).

²⁰⁹ *Id.* § 11.83(a)(1).

²¹⁰ *See id.* § 11.83 (2018); *see also* 15 C.F.R. §§ 990.52–.53 (2018).

pursue a different method, they will not receive the benefit of a “rebuttable presumption” in a court of law.²¹¹

Should a comprehensive wildfire statute be adopted, the Forest Service and perhaps the Bureau of Land Management would be charged with promulgating similar regulations. NOAA’s and the Department of Interior’s regulations are optimal examples of incorporating HEA into natural resource damage assessments. Like both OPA and CERCLA, the wildfire statute should give natural resource trustees the benefit of the doubt and honor their expertise with a statutorily imposed rebuttable presumption. Such a rebuttable presumption may prove invaluable should the case advance to trial and may even serve to encourage settlement between the parties.

3. *Rebuttable Presumption*

As noted above, Linkert was concerned with what many call “the battle of the experts” in wildfire NRDAs.²¹² However, were a comprehensive statute devised and natural resource trustees given the rebuttable presumption, such battles should be limited. The natural resource damage assessment process can be extremely detailed and time consuming, and allowing defendants to challenge the work of experts in which they are generally invited to participate in a court of law will only serve to delay the restoration process.

Presumably, Congress allowed for the rebuttable presumption not only to expedite litigation, but to encourage would-be defendants to work with the trustee to ensure that their science aligns with the damage assessment. However, this is not always the case and responsible parties under other environmental statutes have been known to challenge trustee findings in court.²¹³ Such challenges are traditionally analyzed under the test articulated in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, which requires the judge to be a gatekeeper of admissible testimony by ensuring that the trial is not inundated by experts that add very little to the discussion.²¹⁴ Importantly, the *Daubert* test is not a platform for the judge to decide the credibility or accuracy of particular science.²¹⁵ The *Daubert* court

²¹¹ 42 U.S.C. § 9607(f)(2)(C); 33 U.S.C.A. § 2706(e)(2) (West 2018).

²¹² Linkert, *supra* note 31, at 8–10.

²¹³ See, e.g., *In re: Oil Spill by the Oil Rig “Deepwater Horizon” in the Gulf of Mexico, on April 20, 2010*, MDL No. 2179.

²¹⁴ *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 597 (1993).

²¹⁵ *Id.* at 590.

noted that if the judge were to screen out science based on a strict reading of Federal Rules of Evidence Rule 702, it would “sanction a stifling and repressive scientific orthodox and will be inimical to the search for truth.”²¹⁶ Because the *Daubert* standard is meant to act merely as a gatekeeper rather than a test for the accuracy of scientific methodology and results,²¹⁷ it could easily be argued that those statutes that utilize NRDA and their accompanying regulations already perform *Daubert* functions and as such, challenges under the standard are frivolous. By setting forth methodologies in the regulations promulgated by NOAA that are approved for trustee use, OPA is providing the gatekeeping function envisioned by *Daubert*.

The mere fact that Congress delegated authority to federal and state trustees to carry out NRDA utilizing their own professional experience and opinions should indicate to a court that the trustee is qualified as an expert. They are expected to balance not only science, but also law and policy while conducting their assessment. A *Daubert* challenge can only conceivably challenge the science without considering, much less acknowledging, the legal and policy drivers that direct a trustee’s final conclusions. The further addition of the rebuttable presumption should indicate the government’s faith in the trustee’s ability to consider and manage all three prongs of his responsibility. If the trustee has complied with federally promulgated methods, such methods should be considered accepted by the scientific community and reliable for a trier of fact. As such, in the event that a defendant challenges a trustee’s opinions or expertise, the regulations should be a sufficient gatekeeper. The judge need only determine that the trustee, who is inherently an expert by virtue of Congress’ delegation of authority, has complied with the methodologies set forth in the applicable regulations. Any other action by the court would usurp the trustee’s congressionally delegated authority and would go far beyond the gatekeeping function of the *Daubert* standard.

A comprehensive wildfire statute should articulate the rebuttable presumption, the burden shifting effect of the same, and note that if the trustee’s expertise is challenged in court, the trustee’s findings should only be held to the standards set out in the regulations promulgated by the Forest Service. Such a structure will ensure that

²¹⁶ *Id.* at 596.

²¹⁷ *Id.* at 597.

restoration is achieved as expeditiously as possible, which in turn will restore the public trust and make the public whole once more.

4. *Interaction with State Law*

Often the federal government, states, and private parties will all have claims for damages following environmental disasters. As such, it is important to ensure that all appropriate avenues of redress remain available to those who need them. Generally speaking, federal law preempts state law when state law conflicts with the federal scheme. However, under OPA, Congress saw the importance of leaving state law intact for purposes of state natural resource damage recovery. OPA states that it shall not “affect, or be construed or interpreted as preempting, the authority of any State or political subdivision thereof from imposing any additional liability or requirement with respect to” discharges of oil and pollution within the state and removal activities connected therewith.²¹⁸ OPA also preserves obligations and liabilities of persons under state law, including general common law.²¹⁹ This preservation is important to ensure that states are able to recover damages that the Federal government may not have contemplated. Importantly, states are responsible for their public trust,²²⁰ and need to retain their authority to pursue claims for damages to trust resources. Further still, a state needs to be able to enforce permitting requirements that may have been violated, as well as their own criminal authorities. Thus, federal law cannot possibly “occupy the entire field.”²²¹

CONCLUSION

As we continue to see wildfires burn more frequently, longer, and well outside of typical patterns, it is imperative that the Forest Service

²¹⁸ 33 U.S.C.A. §§ 2718(a)(1), (a)(1)(A)–(B) (West 2018).

²¹⁹ *Id.* § 2718(a)(2).

²²⁰ *Martin v. Lessee of Waddell*, 41 U.S. 367, 406 (1842) (recognizing that the States, not the Federal government, are the owners of the public trust).

²²¹ For a discussion of preemption and environmental law, see Costonis, *supra* note 158. In typical preemption analysis, courts consider specific terms including “questions” to which a statute “speaks directly,” whether or not it is “comprehensive,” or “occupies an entire field.” Analyzing statutes in this way allows courts to identify interstitial gaps that they are permitted to fill through judge made law. It will also determine whether or not a statute may be supplemented with law that operates in the same field, for example the Oil Pollution Act and its relation to admiralty law. There is much debate about whether admiralty law has a place in an OPA case, however, it is abundantly clear from OPA’s savings provision that state law is indeed preserved.

and other natural resource trustees be equipped to fight those blazes and properly manage lands in an effort to prevent them. The WBRFMA is a starting point to fix the funding deficits faced by the Forest Service, but it will not be able to completely cover the costs of management and fire-fighting that are going to continue to grow. A comprehensive wildfire statute could help to fill that void. Such a statute would not only provide certainty, finality, and incentives for prudent operations to industry, but it may even encourage those industries and the government to work together to manage and protect the forests on which the public relies. With a comprehensive wildfire statute, forests may finally fall back into a natural cycle that has been absent for nearly 200 years, living and working with fire rather than against it.

