

ELR®

The Environmental Law Reporter® NEWS & ANALYSIS

THE BEST LEGAL RESOURCE ON EARTH™



VANDERBILT
University
Law School

August 2016

Volume 46, No. 8

www.elr.info

In the Agencies

EPA proposes design details for
Clean Energy Incentive Program

In the Congress

President signs enhanced pipeline
safety legislation

In the Courts

District court strikes down BLM
fracking rule for federal lands

In the States

Washington proposes emissions
standards for greenhouse gases



ENVIRONMENTAL
LAW • INSTITUTE®

Environmental Law Institute and
Vanderbilt University Law School

ENVIRONMENTAL LAW AND POLICY ANNUAL REVIEW

Eric Biber and J.B. Ruhl

*The Permit Power Revisited: The Theory and Practice of
Regulatory Permits in the Administrative State*

With Responses by D. Randall Benn & Brent Fewell,
Ethan G. Shenkman & Aditi A. Prabhu, and William W. Sapp,
April S. Lipscomb & M. Allison Burdette

Michael A. Livermore and Richard L. Revesz

*Rethinking Health-Based Environmental Standards and
Cost-Benefit Analysis*

With Responses by Gary S. Guzy and Sally Katzen

Shelley Welton

Non-Transmission Alternatives

With Responses by Randolph Elliott and Michael Panfil

Alejandro E. Camacho

*Going the Way of the Dodo: De-Extinction, Dualisms, and
Reframing Conservation*

Matthew Wansley

Cost-Benefit Analysis as a Commitment Device

Linda K. Breggin, Janelle Geddes, Shee Shee Jin, and Michael P. Vandenberg

Trends in Environmental Law Scholarship 2008-2015

ENVIRONMENTAL LAW AND POLICY ANNUAL REVIEW

2015-2016

BOARD OF EDITORS

SHEE SHEE JIN
Editor-in-Chief

NICHOLAS BRILL
Executive Editor

MEGAN MCLEAN
Managing Editor

JANELLE GEDDES
Development Editor

CHRISTOPHER HARRELSON
Symposium Editor

ARTICLES EDITORS

DESMOND DENNIS TRAVIS GRAY
ANTHONY JACKSON
EMILY TAYLOR BARRETT TENBARGE

EDITORIAL STAFF

DANIEL GROSS AUSTIN HOLLAND LAUREN HOLTZ ERIC LYONS
DANIEL METZGER MARIAN MIKHAIL KLINE MOORE ALISON MORRIS
ERIK PETERSON ZAKARIYA VARSHOVI

Faculty Supervisor
MICHAEL P. VANDENBERGH

Environmental Law Institute Advisor
LINDA K. BREGGIN

ADVISORY BOARD

BARRY BREEN WM. ROBERT IRVIN RICHARD LEAHY
RAYMOND B. LUDWISZEWSKI VICKIE PATTON DAVID REJESKI
JAMES SALZMAN LAJUANA WILCHER

CONTENTS

Comment

Linda K. Breggin, Janelle Geddes, Shee Shee Jin, and Michael P. Vandenberg,
Trends in Environmental Law Scholarship 2008-2015. 10647

Articles and Responses

Eric Biber and J.B. Ruhl, The Permit Power Revisited: The Theory and Practice of
Regulatory Permits in the Administrative State. 10651
D. Randall Benn and Brent Fewell, Comment on *The Permit Power Revisited:
The Theory and Practice of Regulatory Permits in the Administrative State.* 10658
Ethan G. Shenkman and Aditi A. Prabhu, Permitting and Innovation in the
Digital Age 10662
William W. Sapp, April S. Lipscomb, and M. Allison Burdette, General Permits:
An Environmental Minefield. 10668
Michael A. Livermore and Richard L. Revesz, Rethinking Health-Based Environmental
Standards and Cost-Benefit Analysis 10674
Gary S. Guzy, Rethinking *Rethinking Health-Based Environmental Standards and
Cost-Benefit Analysis: A Solution in Search of a Problem?* 10681
Sally Katzen, What Appears Obvious Is Not Necessarily So 10685
Shelley Welton, Non-Transmission Alternatives 10688
Randolph Elliott, Considering Non-Transmission Alternatives 10695
Michael Panfil, Non-Transmission Alternatives, Distributed Energy Resources,
and a Multi-Directional Grid. 10698

Honorable Mentions

Alejandro E. Camacho, Going the Way of the Dodo: De-Extinction, Dualisms, and
Reframing Conservation 10701
Matthew Wansley, Cost-Benefit Analysis as a Commitment Device 10706

Recent Developments

In the Congress 10711
In the Courts 10715
In the Federal Agencies 10716
In the State Agencies 10721

Recent Journal Literature 10724

Topical Index 10726

About ELR® . . .

ELR—*The Environmental Law Reporter*® is an essential online research tool edited by attorneys that provides the most-often cited analysis of environmental, sustainability, natural resources, energy, toxic tort, and land use law and policy. *ELR* has three components:

- *News & Analysis*, *ELR*'s highly respected monthly journal, provides insightful features relevant to both legal practice and policy on today's most pressing environmental topics. *News & Analysis* is available in print as well as online.

- *ELR UPDATE* provides expert summaries three times a month of the most important federal and state judicial and administrative developments as well as federal legislative and international news. Subscribers can also receive *ELR Daily Update*, our daily summary of federal administrative news.

- *ELR Online*, *ELR*'s subscription-only website at www.eli.org, is a one-stop environmental law and policy research

site with access to over 45 years of *ELR* analysis, extensive links to statutes, regulations and treaties, a comprehensive subject matter index, and many other tools.

Submissions . . .

ELR invites readers to submit articles and comments, which are shorter features, for publication. Manuscripts may be on any subject of environmental, sustainability, natural resources, energy, toxic tort, or land use law or policy. Citations should conform to *A Uniform System of Citation* (the "Bluebook") and should include *ELR* citations for materials that we have published.

Manuscripts should be submitted by e-mail attachment to austin@eli.org. We prefer that the file be in Microsoft Word® format.

Opinions are those of the authors and not necessarily those of the Environmental Law Institute or of funding organizations.

Environmental Law Reporter Advisory Board

Jonathan Adler
Case Western Reserve
University School of Law

Vicki Arroyo
Georgetown University Law
Center

Wayne Balta
IBM Corporation

Lynn L. Bergeson
Bergeson & Campbell, P.C.

Barry Breen
American University
Washington College of Law

Marcilynn Burke
University of Houston Law
Center

Wm. Robert Irvin
American Rivers

Sam Kalen
University of Wyoming
College of Law

Alan Kanner
Kanner & Whiteley, L.L.C.

Peter Lehner
Natural Resources Defense
Council

Alan Leibowitz
EHS Systems Solutions

Raymond B. Ludwizewski
Gibson, Dunn & Crutcher,
LLP

Erin Meezan
Interface, Inc.

Vickie Patton
Environmental Defense Fund

Eric V. Schaeffer
Environmental Integrity
Project

Michael P. Vandenberg
Vanderbilt University Law
School

Lajuana Wilcher
English Lucas Priest &
Owsley, LLP

Subscriptions

e-Access Subscription	\$2,195
UPDATE	\$800
News & Analysis (online & print)	\$800
News & Analysis (print only)	\$695
Additional print copies (available only with existing subscription, excluding UPDATE subscribers)	\$250

ELR Staff

Publisher Scott Fulton
Editor-in-Chief Jay Austin
Managing Editor Rachel Jean-Baptiste
Asst. to Managing Editor William J. Straub
Editorial Assistant Kimi Anderson
Editorial Assistant Aletta Brady
Editorial Assistant Gwen Brown
Editorial Assistant Jessye Waxman

Postmaster

Send address changes to
Environmental Law Reporter®
1730 M Street, NW
Ste. 700
Washington, DC 20036
(202) 939-3800
Fax (202) 939-3868

Periodicals postage paid at Washington, DC, and
at additional mailing offices

ELR—*The Environmental Law Reporter*®
(ISSN 0046-2284) is published monthly.

Contact Us

If you have any questions about using *ELR*, or about your subscription,
please call us at (800) 433-5120 or (202) 939-3844
or e-mail us at orders@eli.org or fax us at (202) 939-3868.

The Environmental Law and Policy Annual Review

Dear Readers:

The *Environmental Law and Policy Annual Review* (ELPAR) is published by the Environmental Law Institute's (ELI's) *Environmental Law Reporter* (ELR) in partnership with Vanderbilt University Law School. ELPAR provides a forum for the presentation and discussion of the best environmental law and policy-relevant ideas from the legal academic literature each year. The publication is designed to fill the same important niche as *ELR* by helping to bridge the gap between academic scholarship and environmental policymaking.

ELI and Vanderbilt formed ELPAR to accomplish three principal goals. The first is to provide a vehicle for the movement of ideas from the academy to the policymaking realm. Academicians in the environmental law and policy arena generate hundreds of articles each year, many of which are written in a dense, footnote-heavy style that is inaccessible to policymakers with time constraints. ELPAR selects the leading ideas from this large pool of articles and makes them digestible by reprinting them in a short, readable fashion accompanied by expert, balanced commentary.

The second goal is to improve the quality of legal scholarship. Academicians have strong incentives to write theoretical work that ignores policy implications. ELPAR seeks to shift these incentives by recognizing scholars who write articles that not only advance legal theory, but also reach policy-relevant conclusions. By doing so, ELPAR seeks to induce academicians to generate new policy-relevant ideas and to improve theoretical scholarship by providing incentives for them to account for the hard choices and constraints faced by policymakers. And the third and most important goal is to provide a first-rate educational experience to law students interested in environmental law and policy.

To select articles for inclusion, the ELPAR Editorial Board and Staff conducted a key word search for "environment!" in an electronic database. The search was limited to articles published from August 1, 2014, through July 31, 2015, in the law reviews from the top 100 *U.S. News and World Report*-ranked law schools and the environmental law journals ranked by the Washington and Lee University School of Law. Journals that are solely published online were searched separately. Student scholarship and non-substantive content were excluded.

The Vanderbilt students then screened articles for consistency with the ELPAR selection criteria. They included only those articles that met the threshold criteria of addressing an issue of environmental quality and offering a law or policy-relevant solution. Next, they considered the articles' feasibility, impact, creativity, and persuasiveness.

Through discussion and consultation, the students ultimately chose roughly 20 articles for review by the ELPAR Advisory Board. The Advisory Board provided invaluable insights on article selection. Vanderbilt University Law School Professor Michael Vandenbergh, ELI Senior Attorney Linda Breggin, *ELR* Managing Editor Rachel Jean-Baptiste, and *ELR* Editor-in-Chief Jay Austin also assisted in the final selection process. Commentary on the selected papers then was solicited from practicing experts in both the private and public sectors.

On April 1, 2016, on Capitol Hill, ELI and Vanderbilt cosponsored a conference at which some of the authors of the articles and comments presented their ideas to an audience of business, government (federal, state, and local), think tank, media, and nonprofit representatives. The conference was structured to encourage dialogue among presenters and attendees. Audio recordings of these events are posted on the ELI and Vanderbilt University Law School ELPAR websites.

The students worked with the authors to shorten the original articles and to highlight the policy issues presented, as well as to edit the comments. Those articles and comments are published here as ELPAR, which is also the August issue of *ELR*. Also included in ELPAR is an article on trends in environmental legal scholarship, which is based on the data collected through the ELPAR review process. We are pleased to present the results of this year's efforts.

Linda K. Breggin, Senior Attorney, Environmental Law Institute,
Adjunct Professor of Law, Vanderbilt University Law School

Jay E. Austin, Editor-in-Chief, *Environmental Law Reporter*

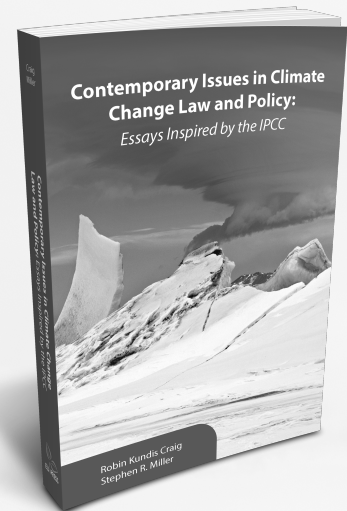
Michael P. Vandenbergh, David Daniels Allen Distinguished Chair
of Law, Vanderbilt University Law School

Contemporary Issues in Climate Change Law and Policy: *Essays Inspired by the IPCC*

By Robin Kundis Craig and Stephen R. Miller

The Intergovernmental Panel on Climate Change's most recent set of reports, generally referred to collectively as the Fifth Assessment Report, present significant data and findings about climate change. But what role does law play in addressing and responding to these findings? This book, the second by the Environmental Law Collaborative, an affiliation of environmental law professors, focuses on the relationship between law and the Fifth Assessment Report in hopes of bridging this gap.

This book's chapters are illustrative of the overwhelming number of legal issues that climate change creates. Some of the contributions remain directly tied to the text of the IPCC's reports, while others focus on climate change more generally. Together, this volume contributes to a constructive and helpful discussion about how to address the climate change challenge.



Review

"The Environmental Law Collaborative has once again produced a volume of contributions on a theme of vital importance. Contemporary Issues in Climate Change Law and Policy uses the IPCC's latest round of reports as the lens through which to assess the progress and trajectory of law for climate change mitigation and adaptation. The result is a collection of chapters that are remarkably diverse in coverage yet coherent and intent in focus. Topics span the waterfront from national security and water infrastructure to religious perspectives and local community action. Each chapter stands on its own as thorough, insightful, and engaging, as well as a bountiful resource of law and policy update and analysis. Unified in the book through its core theme, the authors provide much to be gained for everyone from a newcomer to the rough and tumble of climate policy to those already steeped in its discourse."

—J.B. Ruhl

David Daniels Allen Distinguished Chair of Law
Vanderbilt University Law School



ISBN: 978-1-58576-177-7 | Price \$35.95
ELI members receive a 15% discount on all ELI
Press and West Academic publications.
To order, call **1(800) 313-WEST**,
or visit www.eli.org or westacademic.com.

C O M M E N T

Trends in Environmental Law Scholarship 2008-2015

by Linda K. Breggin, Janelle Geddes, Shee Shee Jin, and Michael P. Vandenberg

Linda K. Breggin is a Senior Attorney with the Environmental Law Institute and an Adjunct Professor at Vanderbilt University Law School. Janelle Geddes is a recent graduate of Vanderbilt University Law School. Shee Shee Jin is a recent graduate of Vanderbilt University Law School. Michael P. Vandenberg is the David Daniels Allen Distinguished Professor of Law and Co-Director of the Energy, Environment, and Land Use Program at Vanderbilt University Law School.

The *Environmental Law and Policy Annual Review* (ELPAR) is published by the Environmental Law Institute's (ELI's) *Environmental Law Reporter* in partnership with Vanderbilt University Law School. ELPAR provides a forum for the presentation and discussion of the best ideas about environmental law and policy from the legal academic literature.

As part of the article selection process each year, Vanderbilt University Law School students assemble and review the environmental law articles published during the previous academic year. In this Article, we draw on the results of the ELPAR article selection process to report on trends in environmental legal scholarship for academic years 2008-2015.

Specifically, this Article reports on the number of environmental law articles published in general law reviews and environmental law journals. We find that although the precise totals varied from year to year, more than 400 environmental law articles were published each year during the 2008-2015 period. Additionally, this Article provides data on the topics covered in the environmental law articles reviewed by the ELPAR staff. The goal is to provide an empirical snapshot of the environmental legal literature and to track trends over time.

I. Methodology

A detailed description of the methodology is posted on the Vanderbilt University Law School and Environmental Law Institute ELPAR websites.¹ In brief, the search for articles that qualify for ELPAR review is limited to articles published from August 1 of the prior year to July 31 of the current year, roughly corresponding to the academic year. The search is conducted in law reviews from the top 100

law schools as ranked by *U.S. News and World Report* in its most recent report, counting only articles from the first 100 schools ranked for data purposes (i.e., if there is a tie and over 100 schools are considered top 100, those that fall in the first 100 alphabetically are counted). Additionally, environmental law journals as listed most recently by Washington & Lee University School of Law are searched, with certain modifications.²

The ELPAR Editorial Board and Staff start with a keyword search for "environment!" in an electronic legal scholarship database.³ Articles without a connection to the natural environment (e.g., "work environment" or "political environment") are removed, as are book reviews, eulogies, non-substantive symposia introductions, case studies, editors' notes, and student scholarship. We recognize that all ranking systems have shortcomings and that only examining top journals imposes limitations on the value of our results. Nevertheless, this approach provides a snapshot of leading scholarship in the field.

For purposes of tracking trends in environmental scholarship, the next step is to cull the list generated from the initial search in an effort to ensure that the list contains only those articles that qualify as environmental law articles. Determining whether an article qualifies as an environmental article is more of an art than a science, and our conclusions should be interpreted in that light. We have attempted, however, to use a rigorous, transparent process.

1. *Environmental Law Institute*, <http://www.eli.org/environmental-law-policy-annual-review/publications> (last visited Apr. 22, 2016); *Environmental Law & Policy Annual Review Online Supplements*, <http://law.vanderbilt.edu/academics/academic-programs/environmental-law/environmental-law-policy-annual-review/online-supplements.php> (last visited Apr. 22, 2016).

2. *Law Journals, Submissions, and Rankings Explained*, WASHINGTON & LEE UNIV. SCH. OF LAW, <http://lawlib.wlu.edu/LJ/methodNew.asp> (last visited Apr. 22, 2016).

3. For the purposes of this analysis, an article is "published" only if it was available on Westlaw on the date the search was conducted. In the spring semester, ELPAR members conduct a search for articles published between August 1 and December 31 of the previous year. In the fall semester, members search for articles published between January 1 and July 31 of that year. Therefore, "embargoed" journals, which are only available on Westlaw after a delay, as well as journals that are published on a date after their "publication date" as listed by Westlaw, are not included for selection by ELPAR and are not counted for trends data purposes. Law reviews of schools added to the *U.S. News and World Report* Top 100 are searched for the entire year in the fall, and articles in law reviews published by law schools removed from the top 100 after the spring search are not considered for trends data.

Specifically, an article is considered an “environmental law article” if environmental law and policy are a substantial focus of the article. The article need not focus exclusively on environmental law, but environmental topics should be given more than incidental treatment and should be integral to the main thrust of the article. Many articles in the initial pool, for example, address subjects that influence environmental law, including administrative law topics (e.g., executive power and standing), or tort law topics (e.g., punitive damages). Although these articles may be considered for inclusion in ELPAR, they are not included for purposes of tracking environmental law scholarship, because the main thrust of the articles is not environmental law.

Each article in the data set is categorized by environmental topic to allow for tracking of trends by topic area. The 10 topic categories are from the *Environmental Law Reporter's* subject matter index: air, climate change, energy, governance, land use, natural resources, toxic substances, waste, water, and wildlife.⁴ ELPAR students assign articles into a primary topic category and, if appropriate, a secondary category.

The ELPAR Editorial Board and Staff work in consultation with the course instructors, Professor Michael P. Vandenberg and ELI Senior Attorney Linda K. Breggin, to determine whether articles should be considered environmental law articles and how to categorize the articles by environmental topic for purposes of tracking scholarship. The articles included in the total for each year are identified on lists posted on the Vanderbilt University Law School website.⁵

II. Data Analysis on Environmental Legal Scholarship

During the 2014-2015 ELPAR review period (July 31, 2014, to August 1, 2015), 418 environmental law articles

written by professors or practitioners were published in top law reviews and environmental law journals. This is a decrease of over 5 percent from the 444 articles in the previous ELPAR review cycle (2013-2014). By comparison, 402 articles were published in 2012-2013, 452 articles were published in 2011-2012, 512 articles were published in 2010-2011, 475 articles were published in 2009-2010, and 455 articles were published in 2008-2009.

Of the 418 total environmental law articles published in 2014-2015, 323 were published in journals that focus on environmental law and 95 were published in general law reviews. The 95 environmental law articles published in general law reviews in 2014-2015 compares to 143 articles in 2013-2014, 93 articles in 2012-2013, 115 articles in 2011-2012, 80 articles in 2010-2011, 97 articles in 2009-2010, and 47 articles in 2008-2009. Overall, the results this year as compared to last year indicate an increase in the number of articles published in environmental law journals and a decrease in the number of environmental articles published in general law reviews.

The primary topics of the 418 articles published in 2014-2015 were as follows: governance⁶ (144), energy (61), land use (58), water (44), climate change (38), wildlife (22), natural resources (18), air (14), waste (12), and toxic substances (7). When counting both primary and secondary topic categories of articles, there were 234 articles in governance, 79 in energy, 71 in climate change, 74 in land use, 55 in water, 39 in natural resources, 27 in wildlife, 27 in air, 14 in toxic substances, and 13 in waste. In 2014-2015, governance remained the most common topic category. Energy articles were second followed by land use and water.

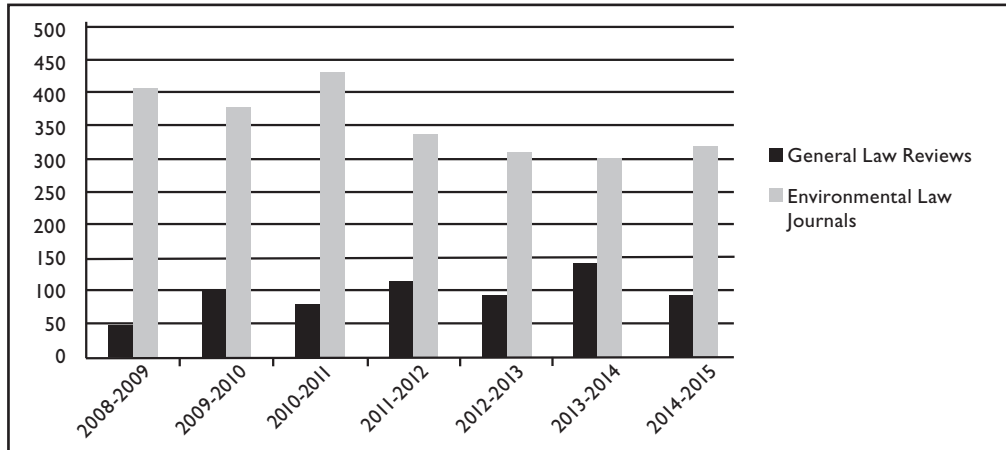
The most common primary topic from 2008-2011 was climate change, but for the fifth cycle in a row, the number of climate change articles has decreased. In contrast, the number of energy articles has increased nearly every year ELPAR has been published.

4. *Environmental Law Reporter*, <http://elr.info/subject-matter-index> (last visited Apr. 22, 2016).

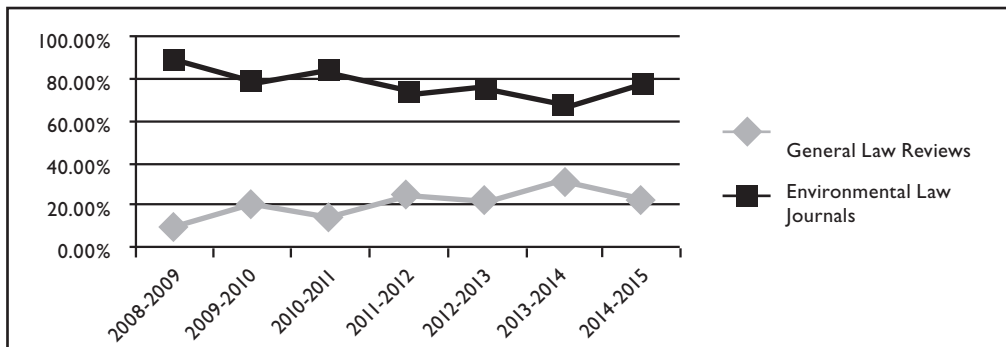
5. *Environmental Law & Policy Annual Review Online Supplements*, <http://law.vanderbilt.edu/academics/academic-programs/environmental-law/environmental-law-policy-annual-review/online-supplements.php> (last visited July 15, 2015).

6. The *ELR* subject matter index includes subtopics for each topic. Subtopics for the governance topic include: administrative law, Administrative Procedure Act, agencies, bankruptcy, civil procedure, comparative law, constitutional law, contracts, corporate law, courts, criminal law, enforcement and compliance, environmental justice, environmental law and policy, Equal Access to Justice Act, False Claims Act, Federal Advisory Committee Act, federal facilities, federal jurisdiction, Freedom of Information Act, human rights, indigenous people, infrastructure, institutional controls, insurance, international, public health, public participation, risk assessment, states, tax, tort law, trade, tribes, and U.S. government. ENVIRONMENTAL LAW REPORTER, <http://elr.info/subject-matter-index> (last visited Apr. 22, 2016).

Number of Environmental Law Articles by Year



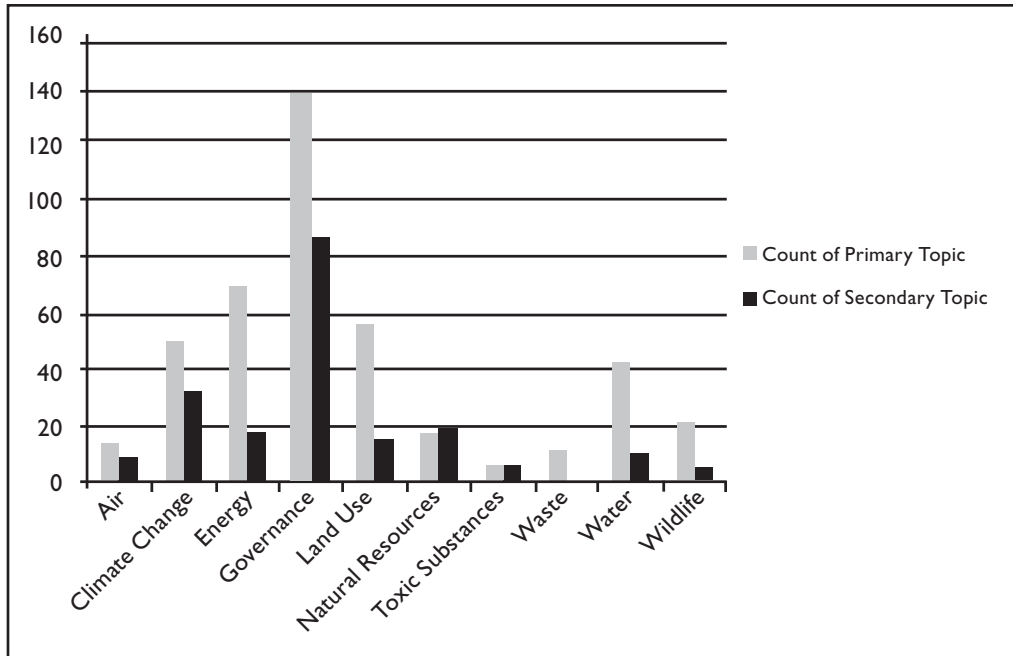
Trends in Environmental Legal Scholarship



Number of Environmental Law Articles by Year

	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
General Law Reviews	47	97	80	115	93	143	95
Environmental Law Journals	408	378	432	337	309	301	323
Total	455	475	512	452	402	444	418

2014-2015 Topics by Category



Number of Articles in Topic Categories by Year

Topics	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Air	5	7	10	17	17	13	14
Climate Change	126	151	91	71	52	49	38
Energy	28	44	60	52	64	69	61
Governance	116	87	82	125	95	124	144
Land Use	46	56	65	48	32	41	58
Natural Resources	26	22	26	27	33	20	18
Toxic Substances	12	20	57	22	19	15	7
Waste	11	14	13	13	8	19	12
Water	54	43	76	60	53	57	44
Wildlife	31	31	32	17	29	37	22
Total	455	475	512	452	402	444	418

A R T I C L E

The Permit Power Revisited: The Theory and Practice of Regulatory Permits in the Administrative State

by Eric Biber and J.B. Ruhl

Eric Biber is a Professor of Law, University of California, Berkeley.

J.B. Ruhl is the David Daniels Allen Distinguished Chair of Law, Vanderbilt University Law School.

I. Introduction

Regulatory permits are ubiquitous in modern society, yet receive little attention in legal and policy commentary and law school curriculums. Broadly speaking, there are two contrasting approaches to permitting. “Specific permits” entail the agency engaging in extensive fact gathering and deliberation particular to the individual circumstances of an applicant’s proposed action, after which the agency issues a detailed permit tailored just to that applicant. “General permits” have the agency issue a permit, with no particular applicant before it, that defines a broad category of activity and allows entities engaging in that activity to take advantage of the permit with little or no effort on their part. General permits involve limited agency review of specific facts in any particular case unless the agency finds good cause to condition or withdraw the general approval.

The question of interest here is where on the spectrum of approaches from extreme specific-permit design to extreme general-permit design a particular permitting program should fall given its policy goals, practical implementation context, and background concerns regarding agency exercise of permitting authority. We answer that question in three stages. Part II outlines the nuts and bolts of permitting and describes the permitting program attributes that define the spectrum of general permits, specific permits, and intermediates, as well as hybrids. Part III examines the

trade offs inherent in shifting the design of a permitting program along the spectrum. We close in Part IV with a summary of permitting design choices and a set of recommendations for agencies to use when designing a permitting program.

II. The Practical Dimensions of Regulatory Permits

To reach an informed assessment of the nature, scope, and impact of the use of permits as a regulatory instrument, one should understand what distinguishes permits from other government regulatory instruments, such as fines, inspections, and taxes. We first describe the nature of permits as a matter of administrative law. We then define the spectrum of permits and what differentiates general permits from specific permits. We close with a deeper examination of design attributes essential to any permitting system and a discussion of the administrative law consequences of adjusting these attributes between their general and specific settings.

A. What Are Permits?

Exactly what constitutes a regulatory permit in the administrative state is not self-evident. For example, the Administrative Procedure Act (APA)¹ refers to permits only once, in the definition of a “license.”² All that can be extracted from the APA is from that definition of license, which, in addition to agency permits, includes “the whole or part of an agency . . . certificate, approval, registration, charter, membership, statutory exemption or other form of permission.”³

The full version of this Article was originally published as: Eric Biber & J.B. Ruhl, The Permit Power Revisited: The Theory and Practice of Regulatory Permits in the Administrative State, 64 DUKE L.J. 133 (2014). That article became the source for a project of the Administrative Conference of the United States on federal licensing and permitting, culminating in a written report based on the article and a set of recommendations to federal agencies. See ACUS, Recommendation 2015-4—Designing Federal Permitting Programs, available at <https://www.acus.gov/research-projects/federal-licensing-and-permitting>. The ACUS report has been excerpted and updated with permission of ACUS, Duke Law Journal, Eric Biber, and J.B. Ruhl. Please see the full article for footnotes and sources.

1. Administrative Procedure Act, 5 U.S.C. §§ 551–59, available in ELR STAT. ADMIN. PROC. Our focus is on federal agency permitting and administrative law; however, most of the analysis herein is directly applicable to state administrative law and practice.

2. 5 U.S.C. § 551(8).

3. *Id.*

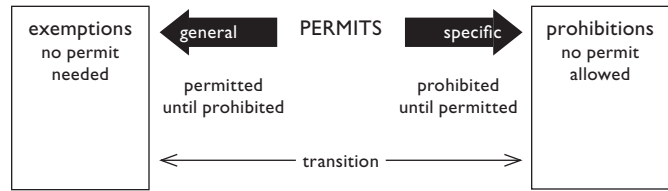
The APA's structure of agency actions provides several core concepts for further articulation of regulatory permits consistent with this catch-all "form of permission" concept. First, permits are a type of statutorily authorized discretionary agency action. Second, permits are a "form of permission,"⁴ though the APA does not specify how permits differ from the other forms of permission. Third, a permit must involve some process and standards for an agency to grant (or deny) permission to a regulated entity to engage in an otherwise statutorily restricted activity. Fourth, permits must fit into a broader range of agency and legislative regulatory measures spanning from unconditional exemption to unconditional prohibition. Finally, permits are subject to the APA's rules of judicial review.⁵

An appropriate starting point for learning about permits comes from first comparing them to their closest cousins, exemptions and prohibitions, and then comparing the variations that fit within the permits category itself. At one end of the broadened spectrum is the statutory exemption: a legislatively-specified activity that is excluded from the need to obtain permission from the agency under the statutory regime. A statutory exemption could be explicit or implied, and its scope could be subject to agency and judicial interpretation. At the other end of the spectrum lie prohibitions: the statutory prohibition is a legislatively-specified activity not eligible for permission, and a regulatory prohibition is an activity the agency has, pursuant to legislatively-delegated authority, excluded from eligibility for permission. Permits occupy the middle ground, where permission is needed and can be granted. Permits thus can be defined as: an administrative agency's statutorily authorized, discretionary, judicially reviewable granting of permission to do that which would otherwise be statutorily prohibited. The definition demands that the act of permitting (1) be explicitly delegated or implied by statute, (2) administrative, (3) discretionary, and (4) judicially reviewable, and that (5) it provide an affirmative grant of permission (6) allowing an act that would be otherwise statutorily prohibited. Regardless of what it is called, all six elements must be satisfied for it to be a permit, and if all six elements are satisfied, it is a permit.

B. Types of Permits—From General to Specific

At the extreme boundaries of permitting, permits do not look much different from either exemptions or prohibitions. Although exemptions and prohibitions are diametrically opposed, the permit power spans the territory between them as illustrated below. Hence, just as exemptions and prohibitions are opposites, so too are general permits and specific permits notwithstanding that both fit the definition of a permit. The key difference is that for general permits the default rule is that the activity is allowed unless approval is withdrawn, whereas for specific permits the activity is prohibited unless approved.

Figure 1. The Spectrum of Permits



C. Design Options

There are three levels of analysis across which to compare general and specific permits as alternative design options, as illustrated in Table 1. The first focuses on the permitting *system*, namely the regulatory apparatus and process the agency constructs in order to issue the permit. The second level focuses on permit *administration*, which pertains to how a particular project avails itself of the permitting system to obtain permit approval. The third level of analysis concerns how the agency manages the *transition* along the spectrum between general and specific permitting as it searches for the appropriate balance among the permitting characteristics. There are two modes of transition—a "continuum mode," in which the agency can move incrementally between the two extremes, and a "discontinuity mode," in which moving between the extremes at some point triggers sharp thresholds regarding the features of one or more of the characteristics of the permitting system or permit administration.

These levels of analysis, however, are not without distinction. First, a general permit, even if minimally burdensome, communicates that the action is subject to the agency's active regulatory supervision, whereas the point of a legislative or regulatory exemption is to convey the opposite. Second, in the case of permits, but not exemptions, the agency might include in the permit's terms demands for information, closer scrutiny of the proposed project, and performance conditions, among other things. Exemptions thus are better thought of as safe harbors—the agency cannot identify a specific project or action that meets an exemption and pull it back into the regulatory program—whereas general permits can expand in regulatory scope.

Because general permits have the flexibility of being more or less general, an agency can adjust many parameters along a continuum to move away from the quasi-exemption effect of general permits. However, the agency runs the risk that as more parameters move in the direction of specific permitting attributes, at some point the agency action will be so particularized that it will require specific-permitting procedures.

I. Permitting Systems

We propose five essential characteristics of permitting systems across which general and specific permitting differ. First is the determination of which party initiates the permitting-approval process—agency or applicant. In general permitting at its extreme, the agency issues a general

4. *Id.*

5. *Id.* §§ 701–06.

Table 1: Permitting Systems, Permit Administration, and Transitions

General Permits	Transition	Specific Permits
<i>Permitting System</i>		
Agency issues permit	discontinuities	Applicant requests permit
High agency assessment burden	continuum	No agency assessment burden
Low regulatory infrastructure	continuum	High regulatory infrastructure
High promulgation requirements	discontinuities	Low promulgation requirements
Permit by regulation	discontinuities	Permit by order
<i>Permit Administration</i>		
No factual submission burden	continuum	High factual submission burden
No agency assessment burden	continuum	High agency assessment burden
No negotiation of terms	continuum	High negotiation of terms
Low agency discretion	continuum	High agency discretion
No public participation	continuum	High public participation
No agency order	discontinuities	Requires agency order
No judicial review	discontinuities	Judicial review available

permit available for all qualifying projects, whereas in specific permitting, applicants must approach the agency to request a permit.

The second is the substantive assessment burden the agency assumes when establishing the system. To issue a general permit, the agency usually must make substantive findings about the merits of a general permit it intends to issue, such as whether the permitted activities are likely to cause significant harm to protected interests. Setting up a specific-permitting system, by contrast, involves no agency substantive findings at the extreme—those are all saved for later during permit administration.

The reverse is true for the third characteristic—regulatory infrastructure. Once a general-permitting system is established, it requires relatively little procedural and substantive infrastructure to move to the permit-administration phase. Again, the opposite is true of specific permitting, which backloads the substantive work to the permit-administration phase, and thus mostly involves erecting an extensive regulatory infrastructure to support permit administration.

The fourth feature involves promulgation requirements of the two permit types. Given all that is bundled into a general permit, the general-permitting system must incorporate extensive promulgation requirements, such as environmental and other impact-assessment steps, public notice and comment, and judicial review. Because specific-permitting systems are principally focused on setting up procedures and standards for later permit administration, establishing the system imposes far less of this burden.

The fifth characteristic is the administrative action by which the permits are issued. Because general permitting packages much of the agency's work at the permitting-system stage, the prototypical general-permitting system relies on agency rulemaking for issuing permits in the form of general promulgations. Specific-permitting systems use particularized agency orders as the permit delivery mechanism. The point of the specific-permitting system, there-

fore, is to set up the procedures and standards for running permit administration to issue permits.

2. Permit Administration

The manner in which general and specific permit *administrations* differ is fairly straightforward. With regard to general permits, in essence, the permit has already been issued as part of the permitting system, with assessment, negotiation, discretion, public participation, and judicial review applied at the macro level, so all that is left is for the regulated entity to use the permit at the micro level. Administration of specific permits is the

opposite: the regulated entity submits a voluminous set of application materials, the agency engages in a rigorous assessment, the parties negotiate toward mutually acceptable terms, the agency makes discretionary decisions about what is acceptable under the statutory regime, the agency seeks public input at various stages, the agency issues an order setting out its final decision, and the order may be the subject of judicial review.

3. Intermediates and Transitions

Flexibility exists for agencies to move across the permits spectrum by increasing information and other parameters required for a general permit, but not so far as to impose the rigors of a specific permit. But this raises the question of transition. A general permit relying on extensive and burdensome requirements at some point simply would not be a general permit, given its increased case-specific requirements. Thus, there are trade offs as the agency moves across the permit-design spectrum.

Moreover, some permitting features, such as the availability of judicial review and public participation, are not on a continuum. For example, courts might perceive the agency action of substantially reviewing and approving use of a general permit as an agency *order* under the APA, and thus require the process to undergo adjudicatory processes not required of rulemakings. Precisely where that discontinuity would occur is difficult to say,⁶ but its possibility imposes some drag on the ease with which an agency can craft intermediate solutions between pure general-permitting systems and pure specific-permitting systems.

6. See Jennifer Seidenberg, Texas Independent Producers & Royalty Owners Ass'n v. Environmental Protection Agency: *Redefining the Role of Public Participation in the Clean Water Act*, 33 *ECOLOGICAL L.Q.* 699, 718 (2006) (discussing a split among the courts as to when public notice and comment is required for project-specific use of a CWA pollution general permit the EPA issued for certain oil- and gas-operation activities).

III. Permit-Design Trade Offs: General Versus Specific

Assuming a statute leaves the full permitting spectrum open to the agency's choice of how to design permits for a particular regulatory program, why would a regulatory program use general or specific permits or some intermediate form? At heart, these questions come down to two factors: the risk of harm the permitted activity poses and the level of burden the transaction costs of a general- or specific-permit program imposes on the regulated parties and the agency. We examine these two factors through the following permit design policy goals and attributes.

A. Permits as Barriers to Entry

Permits effectively act as barriers to entry for an activity. For example, permitting can impose substantial costs in the form of paperwork, information gathering, legal fees, and administrative charges.

Permitting costs often provide a substantial advantage to incumbents in an economic field. Once the first permit has been obtained, it is likely to be much simpler and easier to renew a permit because most of the information has already been collected and developed, and the organization has learned how to manage the permitting process. Moreover, not all regulated parties will be equally able to bear permitting costs. The more permitting costs are fixed, the more they are a burden on small actors.⁷ The costs of determining what permits are required and how most effectively to secure them will often have a high fixed component, as will the difficulty of filling out forms and compiling the relevant information. To the extent we are concerned about deterring or reducing economic activity by small businesses, this is a significant concern.

General permits are a way of reducing the fixed costs of permitting by making those costs less significant without necessarily relaxing the underlying substantive regulatory standards.⁸ General permits can reduce information requirements (for example, by making permit applications simpler and shorter), and can eliminate the need for agency approval before the regulated activity commences (for instance, in the context of notices of intent).⁹ General permits can even eliminate any need for a permit application—such as when the regulated party may proceed without any application or notice to the regulatory agency so long as its activities do not exceed certain thresholds.¹⁰

7. See Thomas J. Dean & Robert L. Brown, *Environmental Regulation as a Barrier to the Formation of Small Manufacturing Establishments: A Longitudinal Examination*, 40 J. ENVTL. ECON. & MGMT. 56, 71 (2000) (finding that firms in industrial areas with higher regulatory burdens on average had larger size).

8. *Id.* at 72.

9. In a notice-of-intent system, a general-permit applicant need only provide notice to the agency of the proposed activity and can proceed with the activity unless the agency moves to halt it.

10. As we discussed earlier, this last situation is for practical purposes more or less the same as a complete exemption from regulation.

B. Permits as Tools for Revealing or Developing Information

Specific permits allow the agency to obtain information about the activities being permitted, the parties seeking permits, and the harms and benefits that the permitted activities might be producing. The regulator might be able to cumulate the information collected from the full universe of permit applications to get a sense of the overall regulatory program, and of the activities the program regulates. Aggregation of data in this way can facilitate an understanding of how widespread particular impacts from permitted programs are and where those impacts are located. Aggregation can also give a sense of the net costs and benefits of an overall regulatory program.

General permits, on the other hand, require less information from the applicant. This can allow agencies to focus their energies, and energies of applicants, on the information that is most useful to the regulatory program, rather than waste energy on collecting unnecessary or redundant information. Alternatively, information may already have been collected and assessed under a different regulatory permit program, on which a general-permit program could piggyback.¹¹

Another reason we may not need as much information is if the harm from the regulated activity is relatively fungible—i.e., its location in time and space is not particularly important. In that case, we do not need information about the location or timing of the proposed action, which reduces the need for individualized specific permits.

C. Permits as Tools to Tailor Regulation to Specific Circumstances

By definition, more specific permits allow for more tailoring of the permit to the specific circumstances of the applicant, the particular activity being approved, or the particular location of the regulated activity.¹² The question thus becomes at what point does the ability to tailor a specific permit make a specific permit more useful than a general permit. Tailoring through specific permits necessarily imposes costs—informational, administrative, transactional, and potentially even litigation related—therefore, tailoring will only be worthwhile if the costs of tailoring are outweighed by the benefits of tailoring.¹³

11. Many of the Section 404 general permits are justified by the Corps as avoiding duplication with other regulatory programs that have already assessed the environmental harms of a regulated action. See, e.g., U.S. ARMY CORPS OF ENG'RS, Decision Document: Nationwide Permit 8, at 2 (2012), available at http://www.usace.army.mil/Portals/2/docs/civilworks/nwp/2012/NWP_08_2012.pdf (oil and gas structures on the Outer Continental Shelf, justified on the basis that the Bureau of Ocean Energy Management already regulates environmental impacts).

12. This is one of the more important benefits of adjudication in general. See, e.g., *NLRB v. Wyman-Gordon Co.*, 394 U.S. 759, 774–75 (1969) (Black, J., concurring); *SEC v. Chenery (Chenery II)*, 332 U.S. 194, 202–03 (1947).

13. See C. Steven Bradford, *The Cost of Regulatory Exemptions*, 72 U. MO. KANSAS CITY L. REV. 857 (2004) (noting that one cost of varying regulatory levels among different parties will be creating costs for regulated parties,

The benefits of tailoring stem from being able to reduce harms and increase benefits by carefully deciding whether an activity should proceed and, if so, under what terms. This means that the risks of harms must be high and can be decreased through tailoring, or the potential of benefits from a proposed activity must be high, and those benefits can be increased through tailoring. In those circumstances, decreasing risks or increasing benefits through careful permit design can be socially worthwhile. On the other hand, if activities will individually have relatively small risks of harm or potential for benefits, the impacts on those risks or benefits through careful tailoring will be relatively small. Thus, general permits make a lot more sense when either the risks of harm or the potential benefits from an activity are relatively small, or the risks of harm or the potential benefits are invariant no matter what tailoring is undertaken. In both situations, tailoring will generally not be useful.

D. Permits as Political Tools

The way in which a permitting system is structured might help address political constraints or reduce resistance to a regulatory scheme.¹⁴ General permits might provoke less political resistance from regulated parties because they are less burdensome in terms of paperwork and transaction costs. Indeed, some permits that do not even require notice to the agency might impose essentially no costs on the regulated party. Avoiding regulatory burdens might be important even if the use of the permits is not limited to situations in which reduced regulatory burdens are economically justified, such as for small parties or when tailoring is not appropriate.

An important source of political resistance due to regulatory burdens is the regulation of widespread, common activities pursued by many individual members of the public. Permitting's fixed costs might simply be politically impossible to impose on frequently pursued activities, especially if there is a general expectation that the activity should be allowed.¹⁵ General permits can allow for regulation with an especially light touch, even allowing ex post approval of projects and avoiding potential backlash against the regulatory system. This is how Clean Water Act Section 404 permits for surface coal mining activities have been used on occasion, allowing developers who might not have even been aware that their activities were covered by the regulatory program to receive after-the-fact permits.¹⁶ In so doing, the regulators may avoid a major political fight

over applying a regulatory program to “everyday activities”—albeit at a potentially high cost to the deterrent effect of the regulatory program. However, there is a flip-side to using general permits to address political resistance to regulation, as political resistance might result in the use of general permits to effectively reduce the substantive standards of the overall regulatory program.

E. Permits as Enforcement Tools

Permits can allow a regulatory agency to know who might be violating the law, what standards regulated parties need to be complying with, and where regulated activities are supposed to be occurring. Compared to a complete exemption, general permits on average should make agency enforcement easier—though general permits may not facilitate enforcement as much as an individualized specific permit. A criticism of the broad use of general permits in the Section 404 program, for example, has been that it has made it too difficult for the agency to identify and prosecute violations of the law, and that more detailed specific-permitting requirements would allow the agency to keep better tabs on who is engaging in regulated activities and whether those parties are complying with the law.¹⁷

There is another enforcement alternative for an agency with a broad regulatory mandate besides general or specific permits—it can choose not to issue any permits that authorize certain activities, and instead it may use its discretion to not prosecute violations of an otherwise applicable regulatory mandate. These kinds of overbroad statutes might allow for relatively simple prosecution of otherwise hard-to-detect regulatory violations, as regulatory agencies can use the frequent but small violations as proxies for more serious, but more difficult-to-prove, violations. The problem is that this sweeping use of prosecutorial discretion creates tremendous uncertainty for regulated parties.

F. Permits as Constraints on Administrative Discretion

Specific permits are more likely to have significant public-participation requirements and face more in-depth judicial review than general permits. Public-participation requirements tend to be greater for specific permits in part because many general permits do not have a structure that allows for notice to the public and an opportunity to be heard. Agencies might apply the statutory mandates for public participation in permitting only during the stage at which they create the general permit, not when applying it to individual actors. And, even if there is a theoretical system by which members of the public might be involved in the application, there is little reason to expect it will occur. For instance, Clean Water Act NPDES general permits allow for any “interested person” to request that the

agencies, and third parties to determine what level of regulation properly applies to a particular regulated party).

14. See Peter H. Schuck, *When the Exception Becomes the Rule: Regulatory Equity and the Formulation of Energy Policy Through an Exceptions Process*, 1984 DUKE L.J. 163, 284-85 (1984) (noting the importance of exemptions from rules that can mollify powerful political interests).
15. See Eric Biber, *Climate Change and Backlash*, 17 N.Y.U. ENVTL. L.J. 1295, 1317-28 (2009).
16. See Thomas Addison & Timothy Burns, *The Army Corps of Engineers and Nationwide Permit 26: Wetlands Protection or Swamp Reclamation?*, 18 ECOL. L.Q. 619, 621, 647-49 (1991).

17. See *id.* at 645-46.

agency issue an individualized permit for a particular project.¹⁸ However, unless members of the public are regularly sifting through the notices of intent submitted to the EPA or state agencies, there is no way that they would be aware a project is occurring, let alone whether there are any permit applications pending.

Although general permits might reduce the ability of nonregulated parties to constrain agency discretion, they also may have the effect of constraining agency discretion with respect to regulated parties. General permits are, in effect, an agency invitation for regulated parties to undertake activities without legal liability so long as they meet the general permit conditions. Of course, agencies can revise or revoke general permits, either in general or specific applications.¹⁹ But, complete revocation of a general permit may require various administrative procedures, such as compliance with notice-and-comment rule-making requirements.²⁰ At the extreme, a general permit without any reporting or notice requirements leaves the agency with no information about who is engaging in the regulated activity, and therefore who can be singled out for enforcement.

G. Permits as Easing Administrative Burdens for Agencies and Regulated Parties

One of the reasons agencies most commonly cite when they develop general-permit programs is that once a general permit is issued, it serves to reduce administrative burdens on the agencies or regulated parties. These cost savings may be particularly important in three circumstances. First, where the regulated activity is undertaken by a large number of entities, reducing compliance burdens will have a major impact on both the agency and the public, as demonstrated by a number of the Section 404 general permits that applied to very widespread activities.

Second, where the impacts of the regulated activity are relatively fungible and invariant (i.e., where tailoring is not very important), the analysis of those impacts can be done at a general level and spread across the entire program, rather than repeated for each permit application. This can create significant economies of scale in terms of a permitting system.

Finally, where there is an overlap between multiple regulatory systems, it may make sense for one regulatory system to “piggy-back” on the other by using a general permit system—for instance, if most or all of the harmful impacts of the regulated activity can be managed through permits issued under one regulatory system, the other regulatory system can take a very general approach, authorizing all activities that have already been permitted.

18. 40 C.F.R. § 122.28(b)(3)(i).

19. *See, e.g.*, 33 U.S.C. § 1344(e)(2) (stating that general permits under the Section 404 program must be revocable by the agency).

20. *See, e.g., id.* (stating that a general permit revocation requires a public hearing). If the general permit has a sunset provision, such as the five-year limit for CWA permits, then no procedures need be followed by the agency to let the permit expire.

IV. Conclusion and Recommendations

Based on our analysis we propose a set of default rules and exceptions based on a harm/variance continuum, as illustrated in Table 2.²¹ The continuum captures the essence of the Section 404 general-permit provision, which conditions that general permits be used only when (1) the risk of harm from a defined activity, both in individual instances and from the cumulative impact of many instances, is low, and (2) the variance expected across instances of the defined activity is low. The strongest case for general permits exists when both factors are very low, and the strongest case for specific permits exists when both factors are very high. Intermediate models can be used to respond to contexts between the extremes.

Table 2. The Harm/Variance Continuum Default Rules

	Low variance	High variance
Low risk profile	General permits	Intermediates
High risk profile	Intermediates	Specific permits

Exceptions to these default rules may be justified, however, when any or a combination of the design trade off factors identified in Part III point against using them. For example, if the harm/variance analysis pointed toward using specific permitting as the default rule, any of the following conditions would counsel toward using more of the general permit characteristics than the default rule otherwise suggests:

- When using the specific permit model would place undesirably disproportionate entry barriers on small businesses and other interests deemed worthy of protection.
- When there is no substantial need for new information about instances of the activity.
- When tailoring to specific circumstances of different instances of the activity is not necessary or practicable.
- When using the specific permit model for the class of activity presents political obstacles that could undermine implementation of any regulatory response.
- When the enforcement advantages of specific permitting are either unnecessary or too costly.
- When public participation and other mechanisms for constraining agency discretion are either unnecessary or impracticable.

21. These recommendations differ in some respects from those ACUS adopted for federal agencies as the product of its project on regulatory permits, for which we served as co-consultants. *See ACUS, Recommendation 2015-4—Designing Federal Permitting Programs*, available at <https://www.acus.gov/research-projects/federal-licensing-and-permitting>.

- When using the specific permit model would impose undue administrative burdens on the agency or regulated entities.

The more factors present, the more appropriate it would be to move toward a general permits approach. If only one factor leans in the direction of the use of a general permit, a specific permit is probably more appropriate. This might be especially true if the only factor in favor of a general permit is political resistance.

Once these factors have been assessed, the agency can select from the permitting system and permitting administration attributes discussed in Part II, within the extent of its discretion under the applicable statutory authorities, to design the permitting program to achieve whatever balance between general and specific provides the best fit to the class of regulated actions.

To summarize, we recommend the following protocol as a step-wise process for an agency to explore where on the general-to-specific spectrum provides the best platform for a particular permitting context.

1. Conduct the harm/variance analysis for the class of regulated actions in question and determine the default position within the broad categories of

general, intermediate, and specific permitting. This defines the starting point for permit design.

2. Evaluate whether any of the seven design trade off factors warrants adjusting from the default position determined in Step 1 towards general or specific permitting. The presence of multiple factors in favor of general permitting is a stronger indication that general permits are appropriate. Reliance on only one factor should be avoided, especially if that factor is politics.
3. Design the permitting system and permitting administration attributes to achieve the optimal design goal. This defines the optimal permitting program design.
4. Determine the latitude the relevant statutory authority provides for implementing the optimal permitting program and adjust any attribute as needed to conform to the statute. This defines the permitting program that is within the agency's statutory authority to implement and which best balances general and specific permitting for the class of actions in question.

C O M M E N T

Comment on The Permit Power Revisited: The Theory and Practice of Regulatory Permits in the Administrative State

by D. Randall Benn and Brent Fewell

D. Randall Benn and Brent Fewell both served in senior roles at the U.S. EPA Office of Water and are founding Partners of Earth and Water Group, a boutique law firm of experienced practitioners advancing client interests across a broad range of environmental and business matters. For more information, please visit www.earthandwatergroup.com.

In “The Permit Power Revisited,” Professors Biber and Ruhl make a well-articulated and easy to follow argument for a regulatory shift along the “spectrum of [permitting] approaches” from “specific permits” to the more favored “general permits.” In fact, the article might just as easily be called “The Case for General Permits.” After offering a thoughtful definition of what constitutes a permit (which turns out to be ill-defined under the Administrative Procedure Act) and laying out the six vital elements of “permitness,”¹ the authors make an important contribution to the literature by proposing five essential characteristics of permitting systems and a rubric for choosing the best system for a particular application using a “harm/variance” analysis.

Biber and Ruhl outline the theoretical benefits and costs of differing permitting approaches and argue that “[t]ailoring through specific permits necessarily imposes costs—informational, administrative, transactional, and potentially even litigation-related.” Reducing the argument to its simplest form, general permits are found to be a more cost-effective approach to reducing certain forms of pollution. The authors argue that “the question thus becomes at what point does the ability to tailor a specific permit make a specific permit more useful than a general permit. Tailoring through specific permits necessarily imposes costs—informational, administrative, transactional, and potentially even litigation related—therefore, tailoring will only be worthwhile if the costs of tailoring are outweighed by the benefits of tailoring.” How one goes about deciding

which of the permit approaches to deploy is a central part of their analysis.

Among other things, the authors posit that, at least when the risk of harm is low and the “variance expected across instances of the defined activity” are low, general permits are to be preferred. They further argue that general permits reduce the fixed costs for the permittee (thereby equalizing the regulatory playing field for small businesses) and administrative costs to the regulator. Herein, by requiring less information from the applicant, the regulator can “focus their energies, and energies of applicants, on the information that is most useful to the regulatory program, rather than waste energy on collecting unnecessary or redundant information.”

We can agree with the theory . . . in theory. But within one of the regulatory regimes that we know best, that of the Federal Water Pollution Control Act, better known as the Clean Water Act (CWA) (33 U.S.C. Sections 1251 *et seq.*), there are clearly exceptions to the rule.² In that context, permitting (or non-permitting) schemes should be chosen based on their effectiveness in protecting water quality. Hence regulators should always ask which of the permitting approaches (or non-permitting approaches), as influenced by economic, social, and political considerations, will best enable the restoration of our degraded watersheds.

Today, too many of our nation’s waters remain impaired and unable to meet state water quality standards. Although our rivers no longer catch on fire, increasingly they are impacted by pollutants such as pharmaceuticals, excess

1. It turns out that Justice Potter Stewart might not have just known one when he saw one—according to Biber and Ruhl the “definition demands that the act of permitting (1) be explicitly delegated or implied by statute, (2) administrative, (3) discretionary, and (4) judicially reviewable, and that (5) it provide an affirmative grant of permission (6) allowing an act that would be otherwise statutorily prohibited.”

2. Biber and Ruhl present their thesis largely in the context of the CWA 404 program, but the proposition of a permitting approach based on a harm/variance logic has strong appeal across a wider number of CWA programs including, especially, the National Pollutant Discharge and Elimination Systems (NPDES) program, which is the focus of this Comment.

nutrients causing hypoxia and toxic algal blooms (with increasing impacts on drinking water supplies), and sediment from stormwater that is devastating so many of our lakes, rivers, and estuarine waters.

I. Congress Established a High Bar With Lofty Goals

The CWA was born in 1972 with an awesome objective—to “restore and maintain the chemical, physical and biological integrity of the Nation’s waters.”³ To achieve that objective, Congress established two national goals: (1) to achieve a level of water quality which “provides for the protection and propagation of fish, shellfish and wildlife and provides for recreation in and on the water” by July 1, 1983 and (2) the elimination of discharges of pollutants into United States waters by 1985.⁴ Much progress was made on these goals in the first twenty years of the Act but have stagnated significantly over the two decades due, in large part, to the scope and nature of the pollution sources. We have largely moved from end-of-pipe discharges to decentralized ones.

To achieve the Act’s lofty goals, the U.S. Environmental Protection Agency (EPA) has taken the mandate from Congress and grown the Act into a massive regulatory program founded on, you guessed it, permitting. Although, to be fair to the Agency, much of the growth has been compelled through third-party litigation and judicial fiat that has pushed EPA into areas where the Agency had previously declined to extend the program. For example, water transfers have historically been viewed by the Agency as beyond the purview of the CWA permitting program. However, protracted litigation by environmental groups have now subjected water transfers to individual National Pollutant Discharge and Elimination Systems (NPDES) permits.⁵ These developments continue to place enormous strains on both EPA and the states, who are responsible for administering the CWA permitting program, not to mention the regulated communities who must bear the costs of complying with NPDES permits. Yet the ultimate question remains—does expanding the universe of NPDES permits improve and protect the quality of our nation’s waters? If so, which permit approaches are most suited for the essential goal of maximizing protection?

Within EPA, the Office of Water’s reach, which controls “point sources” of pollution through the NPDES, includes the permitting of animal feeding operations, aquaculture, biosolids, industrial wastewater, municipal wastewater, industrial discharges to publicly operated treatment works (POTWs) through the national pretreatment program,

pesticide applications, and stormwater and vessel discharges.⁶ The NPDES program has grown from 60,000 permits in the early 1970s to well over 700,000 today. According to EPA figures, the breakdown between individual and general permits is as follows:⁷

Individual Permits (IPs): In total, approximately 46,700 permits.

- Majors: 6,700
 - POTWs: 4,200
 - Non-POTWs: 2,500
- Minors: 39,000
 - POTWs: 10,000
 - Non-POTWs: 29,000
- Stormwater Phase I MS4: 1,000

General Permits (GPs): In total, approximately 775 general permits cover around 684,500 permittees.

Broken down by large topic area estimates:

- Vessels: 69,000
- Pesticide applications: 365,000
- Stormwater: 180,500
 - Phase II MS4: 6,000
 - Industrial Stormwater: 90,000
 - Large Construction Activity: 36,500 per year
 - Small Construction Activity: 48,000
- Other non-stormwater: 70,000

Once an individual application is submitted, it typically takes six months or longer to gain coverage. Such permits are only valid for five years and holders must apply for renewal 180 days before the permit’s expiration date. However, the sheer number of these documents has overwhelmed state and federal capacity and many have been administratively continued indefinitely, creating the much lamented “NPDES permit backlog,” which has been a continuing challenge since the 1980s as the volume of IPs has grown.⁸ In some cases, it can take up to five years to reissue an individual permit for a major discharger.⁹ EPA has worked closely with the States over the last decade to reduce the permitting backlog under the Permitting for Environmental Results initiative, but the complexity and

3. 33 U.S.C. § 101(a).

4. See 33 U.S.C. § 101(a)(1) and (2).

5. See FORESTER DAILY NEWS, *What’s All the Fuss?* (May 2, 2007), available at <http://foresternetwork.com/daily/water/whats-all-the-fuss/>.

6. EPA’s reach is significantly magnified through state-delegated NPDES authority, which has been granted to all but four states and territories. Only Idaho, Massachusetts, New Hampshire, and New Mexico are not delegated programs. See http://www.ecos.org/section/states/enviro_actlist, for a list of delegated environmental programs.

7. U.S. EPA NPDES Permit Writer’s Course, EPA Office of Water, communication with D. Nagle, March 23, 2016; see also NPDES Permit Status Reports, available at <https://www.epa.gov/npdes/npdes-permit-status-reports>.

8. See EPA Office of Inspector General Report, *Efforts to Manage Backlog of Water Discharge Permits Need to Be Accompanied by Greater Program Integration*, June 13, 2005, Report No. 2005-P-00018, available at <https://www.epa.gov/office-inspector-general/report-efforts-manage-backlog-water-discharge-permits-need-be-accompanied>.

9. *Id.* at 14.

resource demands of managing the IP program will continue to be a major program challenge.

Conversely, EPA's "General Permit Inventory" covers a lot of activity—as noted above, the pesticide general permits alone cover 365,000 applicators—and, as Biber and Ruhl suggest, they are significantly easier and less expensive to apply for and obtain than IPs and are simpler to renew and administer.¹⁰ Their appeal is obvious.

II. Misconceptions Regarding Enforcement and Liability Should Not Favor Individual or General Permits

One countervailing argument to GPs, according to Biber and Ruhl, is that they "are, in effect, an agency invitation for regulated parties to undertake activities without legal liability," a criticism often voiced by those opposed to general permits. The authors of this paper disagree, however, with the characterization that general permit holders are without liability. While it is certainly true that a GP holder is more likely to evade enforcement than an IP holder, simply based on the sheer number of GPs and odds of getting caught, GP holders are legally subject to the same civil and criminal penalties as IP holders.

The Biber/Ruhl harm/variance lens is also consonant with the types of harms that a permit is intended to regulate and manage. Toward this end, since GPs cover discharges with significantly less harm to the environment, traditional enforcement is less of an issue than major discharges covered under IPs. But the assumption that traditional enforcement is less effective or impactful for GPs versus IPs is incorrect as recent enforcement actions involving general permits have resulted in multi-million dollar fines and settlements.¹¹ In addition, the notion that traditional enforcement approaches that might "shield" GP holders will remain static, or should remain static, is also incorrect. For example, EPA's Next Generation Compliance initiative is developing more powerful tools, including sensors with more sensitive detection limits, and more of those tools are being deployed at the micro-landscape level. In addition, new pollution detection and initial response tools will further empower enforcement by local communities and the general public.¹² This development is inevitable and important as the future of pollution control continues to focus on the myriads of diffuse sources, which can only be effectively regulated through an integrated, holistic approach that lends itself to a GP-type permitting approach.

III. General Permits Are Effective Tools to Address 21st Century Pollution Problems

In 2010, the National Academy of Public Administration published a report titled *Taking Environmental Protection to the Next Level*,¹³ wherein NAPA argued:

When we fertilize our lawns, drive our cars, wash our dishes, or go about our other daily routines, we contribute to making our streams, rivers, bays, and oceans unswimmable and toxic to marine life. The same potential arises as farmers grow the food we eat, when businesses dispose of the byproducts of their work, and when builders create new communities. In short, the necessities of life and pollution of our environment are inextricably linked.

We simply cannot expect twentieth century tools to effectively solve twenty-first century environmental problems, and must use a more holistic, watershed-based approach, based on targeted geographic responses, in order to deal with these diffuse pollution problems. Some have discussed this in terms of regulating for sustainability:

Such approaches do not change applicable regulations; rather they offer flexibility in the implementation and associated timing of regulatory requirements. EPA's support of integrated watershed approaches, such as the use of watershed-based Total Maximum Daily Loads (TMDLs) and watershed-based permitting, are examples of more holistic approaches to geographic areas. These approaches also demonstrate how EPA can play a role as a "civic enabler" in implementing its regulatory programs, advancing community based approaches that support collaborative place-based work.¹⁴

The use of GPs in the case of stormwater and vessel discharges, for example, was an appropriate use of the general permitting scheme for a very large number of regulated but mostly minor discharges. As the authors suggest, we believe there is a need and opportunity to use more GPs on a watershed-based approach where, for example, a TMDL has been established, along with load and waste load allocations, to restore impaired waters. This approach has been used effectively, for example, in the Commonwealth of Virginia, where the state's general NPDES permit allows the flexibility for regulated entities to engage in nutrient trading and offsets to reduce pollution from existing and future sources.¹⁵

We also agree with the authors that the greater up-front investment in developing robust general permits can lead to better regulatory programs and environmental out-

10. See also <https://cfpub.epa.gov/npdes/permitissuance/genpermits.cfm>.

11. In 2008, EPA and DOJ brought an enforcement action against four of the nation's largest home builders for \$4.3M to resolve alleged violations involving the Construction General Permit. See *United States v. KB Home, Centex Homes, Pulte Homes, and Richmond American Homes*. Copies of the complaints and consent decrees available at <https://www.epa.gov/enforcement/home-builders-clean-water-settlement>.

12. See Kat Austen, *Environmental Science: Pollution Patrol*, 517 NATURE 136 (Jan. 7, 2015), available at <http://www.nature.com/news/environmental-science-pollution-patrol-1.16654>.

13. NAPA report, available at <http://www.napawash.org/wp-content/uploads/2007/07-07.pdf>.

14. See George Wyeth & Beth Termini, *Regulating for Sustainability*, 45 ENVTL. L. 663 (2015), available at <https://law.lclark.edu/live/files/20064-45-3-wyethpdf>.

15. See VPDES Watershed General Permit for Nutrient Discharges to the Chesapeake Bay, available at <http://www.deq.virginia.gov/Programs/Water/PermittingCompliance/PollutionDischargeElimination/NutrientTrading.aspx>.

comes. Drawing upon the experience of other countries, such as Australia, where the approach to protecting water quality is a more flexible bottom-up approach spearheaded by local governments, we believe that a general permitting scheme would encourage more flexible and collaborative efforts at the local and regional levels to address complex and intractable water quality problems.¹⁶

IV. Individual Permits Will Continue to Serve as an Integral Tool for Discharges at the End of the Harm/Variance Spectrum

While there is doubtless some “waste[d] energy . . . collecting unnecessary or redundant information” in specific permits, we agree with the authors that they can provide “a substantial advantage to incumbents in an economic field,” and they have played a critical role in the effort to meet the CWA’s lofty objectives. Generally speaking, an individual permit is written to reflect the unique site-specific conditions of a discharger (based on information submitted by that discharger) and to meet the over-riding mandate to protect the receiving water.

In general, we have found that most individual permit holders (particularly municipal or investor-owned municipal utilities) make every effort to meet their discharge limits and can be considered true “environmentalists” in that they are the first line of defense in protecting our nation’s rivers, lakes, and oceans. Where those permit holders have been lax, many non-governmental organizations, motivated by a passion for “their” waterbody, have scrutinized discharge monitoring reports, literally measuring molecules at the end of pipes, and held them to account. It is the specificity of the “specific” permits that makes this pas-de-deux possible, and it has led directly to great improvements in the nation’s water quality.

Some would argue the opposite, that enforcement actions based on NPDES permits typically focus on relatively small impacts to the environment that drain already cash-strapped municipalities and fail to focus on the overall health of the waterbody. For example, the last two decades,

the EPA and DOJ have focused on wet weather consent decrees, forcing some communities to spend billions of dollars on underground tunnels in order to reduce the number of wet weather overflows that violate a municipality’s individual permit provisions. While the objective of reducing raw sewage from entering our rivers is a laudable goal, inflexible approaches based on the construct of an “individual permit” have been costly and, in some cases, failed to generate meaningful environmental improvements or benefits to public health. Such failures have led to a call for greater permitting flexibility through, for example, EPA’s integrated planning approach.¹⁷

We also strongly agree with the authors in their cautionary advice to the regulators to avoid loading up general permits with too many requirements, as the consequent loss of flexibility “runs the risk that as more parameters move in the direction of specific permitting attributes, at some point the agency action will be so particularized that it will require specific-permitting procedures.” We would also extend that argument to the erosion of the economic benefits associated with general permits. For example, there is a strong push by environmental groups and some states to impose numeric limits and extensive monitoring within general permits, thus significantly increasing the burden and costs of administering the GPs.

V. Conclusion

At least in the context of the CWA, the Biber/Ruhl article is timely and adds great value to the continuing legal and policy debate on alternatives to tackling some of the intractable environmental problems that continue to elude our aging regulatory programs. While individual permits will continue to be the most effective tool for regulating individualized pollution sources with greater potential for environmental harm, despite the intensive resources required, shifting toward general permits that are cheaper to enter, easier to renew and create less administrative burdens on agencies and the regulated community is the wave of the future. Herein, Biber and Ruhl have provided a useful rationale and roadmap for making that transition.

16. *Review of Urban Water Quality Regulation in Australia*, Australian National Water Commission, Waterlines Report Series No. 47, May 2011, available at http://archive.nwc.gov.au/__data/assets/pdf_file/0003/8265/47_review_of_urban_water.pdf.

17. See Memo from Nancy Stoner titled “Integrated Municipal Stormwater and Wastewater Planning Approach Framework,” June 5, 2012, https://www3.epa.gov/npdes/pubs/integrated_planning_framework.pdf.

C O M M E N T

Permitting and Innovation in the Digital Age

by Ethan G. Shenkman and Aditi A. Prabhu

Ethan G. Shenkman is the Deputy General Counsel, and Aditi A. Prabhu is an Attorney-Adviser, at the U.S. Environmental Protection Agency. The views expressed herein do not necessarily represent the views of EPA.

Co-authors Eric Biber and J.B. Ruhl should be commended for providing a thoughtful framework for when agencies should consider individual versus general permitting regimes. They presented a similar framework for the Administrative Conference of the United States, which is a helpful forum for airing perspectives on important administrative law topics. While Biber and Ruhl discuss some of the key factors for agencies in designing a permitting scheme, we identify some areas where they may have relied on overly generalized assumptions and suggest additional considerations they could take into account in their model.

In particular, we want to highlight the extent to which the Environmental Protection Agency (EPA) is exploring innovation in permitting. Taking advantage of advances in digital information technology, EPA has been pursuing initiatives like electronic reporting and seeking ways to advance transparency and public participation to address environmental justice. These modern approaches make permitting work more efficiently and effectively.

We also note that the longer version of Biber and Ruhl's article is a response to Richard Epstein's 1996 article, "The Permit Power Meets the Constitution."¹ Epstein paints an extreme picture of the permitting power that is not, in our view, reflective of reality, and is based on a number of unwarranted assumptions.² As Biber and Ruhl note, Epstein "employed a caricature of permitting that bears little resemblance to permitting in action today."³ They recognize that the "reality is that the permitting system has evolved into a far more flexible, nuanced, and innovative institution in the modern administrative state."⁴ In their longer piece, Biber and Ruhl offer

increased use of general permits as an antidote to some of the problems depicted by Epstein. But in so doing, they risk implicitly accepting certain premises of Epstein that are not necessarily accurate.

To tackle these points in a succinct and hopefully entertaining way, we have organized our comment around some of the fallacies or misperceptions about permitting that are, unfortunately, repeated in many different contexts and deserve some rebuttal. We hope that Biber and Ruhl will parse some of these misconceptions as they further develop their framework.

I. Misconception #1—Agencies Do Not Make Sufficient Use of General Permits

Biber and Ruhl's recommendation encouraging greater consideration of general permits could be read to imply that agencies like EPA are not doing enough to take advantage of general permitting as a regulatory approach. To the contrary, EPA is well aware of this tool and uses it where legally authorized and appropriate.

EPA recognizes that general permits can create efficiencies for regulatory agencies and regulated entities alike. They can reduce paperwork on both sides, ensure consistent permit conditions for similar facilities, and lower transaction costs, delays, and uncertainty. General permits can serve the statutory goal of protecting public health and the environment and provide the agency with useful information about regulated facilities.⁵ In some situations, general permits may be the only realistic solution to meeting statutory goals without creating a crushing administrative workload.⁶

1. Richard A. Epstein, *The Permit Power Meets the Constitution*, 81 IOWA L. REV. 407 (1995).

2. We disagree with many aspects of Epstein's critique. For example, while Epstein paints permitting as ripe for abuse, checks and balances in the permitting process—including rulemaking to set up permitting programs, public participation requirements, and judicial review—constrain agency discretion and provide meaningful protections for permit applicants.

3. Eric Biber & J.B. Ruhl, *The Permit Power Revisited: The Theory and Practice of Regulatory Permits in the Administrative State*, 64 DUKE L.J. 133, 138 (2014).

4. *Id.* at 138-39.

5. The term "general permit" itself embraces a variety of permit structures. Some general permit programs provide automatic coverage. Others solicit certain information about the facility and type of discharge, and may also require monitoring and regular reporting. General permits can also have tiered conditions to address differences within a category of permittees. The NPDES permit regulations at 40 C.F.R. 122.28 provide an example of the variety of general permits.

6. *NRDC v. Costle*, 568 F.2d 1369, 1380 (D.C. Cir. 1977) (recognizing that EPA may rely on general permits under the Clean Water Act as a "means of coping with administrative exigency").

As Biber and Ruhl acknowledge, for example, EPA makes significant use of general permits in certain Clean Water Act programs. Notably, around 95% of sources permitted under the National Pollutant Discharge Elimination System (NPDES) program are regulated under general permits.⁷ EPA and the Army Corps of Engineers also extensively rely on general permits in implementing the Clean Water Act section 404 program.⁸ When property owners seek permits under the Clean Water Act for the discharge of dredged or fill material into navigable waters, 90-95% of their proposed activities are covered by an existing general permit. These general permits cover most projects that are likely to be undertaken by individuals or small businesses. The vast majority of general permit applicants (86%) receive verification of their coverage within 60 days of submitting their application.⁹

While some statutory schemes may be more amenable to use of general permits than others, the potential utility of general permits is certainly not limited to water programs. To take a recent example from the air context, in 2015 EPA issued general permits under the Clean Air Act for minor sources in Indian country.¹⁰ These general permits cover hot mix asphalt plants and stone quarrying, crushing and screening facilities. EPA issued general permits for these industries because the covered facilities are similar in size and operating conditions and would use similar control equipment or techniques. The general permits contain emission limitations and other restrictions governing how sources may be constructed, modified, and operated. In issuing the general permits, EPA noted that they were cost-effective in streamlining the process, reducing resource burdens, and decreasing time lags for permittees.

II. Misconception #2—General Permits Are Easy and Noncontroversial

Biber and Ruhl's recommendation may understate how complex it can be to develop general permits that fit a large group of entities, while meeting statutory requirements and objectives. Although they note that the Administrative Procedure Act gives agencies great flexibility in designing their administrative procedures, they do not grapple with the specific procedural and substantive requirements for permit programs in environmental statutes, which can constrain agency discretion; nor do they fully consider cross-cutting statutes like the Endangered Species Act and

National Environmental Policy Act, which add procedural requirements and other legal considerations.¹¹

Biber and Ruhl suggest that one of the main deterrents to wider use of general permits is an agency's unwillingness to commit resources up front to develop general permit regimes. The decision whether to use general permits goes far beyond that, however, and requires careful thought and legal analysis; the development of environmentally protective, implementable, legally defensible general permits can be challenging.

Going down the path of general permits is not without legal risk. For example, EPA's 2003 general permit for stormwater discharges from construction activities was challenged on the grounds that it did not fulfill the Clean Water Act's public notice provisions or meet the requirements of the Endangered Species Act; in that case, the permit was upheld by the Fifth Circuit.¹² By contrast, EPA's 2013 Vessel General Permit for discharge of ballast water from ships was challenged by environmental groups and remanded by the court.¹³ Our point here is not to delve into the extensive case law generated by litigation over general permits, but simply to note that the question of individual versus general permits can be a complex and highly context-specific inquiry, depending on the particular statute and program at issue.

III. Misconception #3—Epstein's Critique of the "Permit Power" Is Directly Relevant to the Pollution Control Context

In their analysis of agency permitting choices, Biber and Ruhl translate Epstein's concerns about the permit power from land use/zoning into the pollution control context. The solutions they offer, including broader use of general permits, seem intended (in part) to assuage the concerns Epstein raised. We question, however, whether Epstein's underlying philosophical concerns carry over to the pollution context in the first place.

In our view, the "prohibited unless authorized" framework that Epstein critiques—under which a harm-

7. Proposed NPDES Electronic Reporting Rule, 78 Fed. Reg. 46006, 46026 (July 30, 2013).

8. See Biber & Ruhl, *supra* note 3, at 162-63.

9. Brief of Petitioner, U.S. Army Corps of Engineers v. Hawkes Co., No. 15-290 (S. Ct. Jan. 22, 2016).

10. General Permits and Permits by Rule for the Federal Minor New Source Review Program in Indian Country for Five Source Categories, 80 Fed. Reg. 25064 (May 1, 2015).

11. For example, the Clean Water Act requires that NPDES permits "ensure that every discharge of pollutants will comply with all applicable effluent limitations and standards." *Waterkeeper Alliance v. EPA*, 399 F.3d 486, 498 (D.C. Cir. 2005) (citing CWA § 402(a)). NPDES permits include technology-based effluent limitations based on available pollution control technology, water-quality-based effluent limitations based on the impact of discharges on receiving waters, and monitoring and reporting conditions.

12. *Texas Independent Producers & Royalty Owners Association v. EPA*, 410 F.3d 964 (5th Cir. 2003).

13. *NRDC v. EPA*, 804 F.3d 149 (2d Cir. 2014) (remand without vacatur). In another example of how complicated the issuance of general permits can be, a coalition of industry groups challenged EPA's 2000 Multi-Sector General Permit (resulting in a settlement), and a coalition of environmental groups subsequently challenged EPA's 2015 Multi-Sector General Permit. Litigation on the latter is pending.

ful behavior is presumed prohibited unless a permit is obtained—is a natural starting point for regulation of pollution that threatens public health and the environment. After all, there is no inherent “right to pollute.” That is one of the fundamental premises behind major environmental regulatory regimes such as the Clean Water Act and Clean Air Act, which, in essence, recognize the right of the public to be free from unreasonable dangers imposed by those who engage in pollution generating activities.

We also disagree with the suggestion (if one were to take seriously the implications of Epstein’s article) that pollution externalities can adequately be addressed by a permitting framework limited by principles of public nuisance and tort law. For society’s most pressing environmental challenges, the common-law framework is, as a general matter, outdated and unworkable. That is why Congress established and empowered regulatory agencies with technical expertise to address impacts systematically in an efficient, fair, and protective way—which includes a proactive permitting regime. The Supreme Court recently recognized this in *American Electric Power v. Connecticut*, where, in the context of finding that federal common-law nuisance claims were displaced by Congress, it described several ways in which the tort system may be inadequate to address complex air pollution issues, such as controlling greenhouse gases, that transcend traditional boundary lines. The Court opined that, in contexts like these, the “expert agency is surely better equipped to do the job than individual district judges issuing ad hoc, case-by-case injunctions. Federal judges lack the scientific, economic, and technological resources an agency can utilize in coping with issues of this order.”¹⁴

We suspect that Biber and Ruhl would agree that Epstein’s critique of the “Permit Power” is fundamentally flawed and of questionable relevance to the pollution control context. Query, then, how helpful it is to think about general permits as an antidote to the ills posited by Epstein, as opposed to considering them on their own merit based on their relative advantages and disadvantages.

IV. Misconception #4—“The Power Grab”: Regulators Seek to Use Permitting Regimes to Expand Their Power

Another common misconception is that agencies are constantly trying to expand their regulatory reach by enlarging the scope of permitting. For example, Biber and Ruhl’s article, in its discussion of the ubiquity of permitting today, may be read to suggest that through the regulation of greenhouse gases under the Clean Air Act, EPA was “attempt[ing] to ease its way into a massive permitting program.”¹⁵ It would be ironic to imply that EPA was seeking to vastly expand its permit power

where the agency went to great lengths to cabin permitting requirements for stationary sources of air pollution to those emitting the greatest amounts of the pollutant in question.

In the “Tailoring Rule,”¹⁶ EPA sought to address a statutory threshold that appeared unsuited to greenhouse gases when EPA took action to regulate this pollutant under the Clean Air Act following the Supreme Court’s decision in *Massachusetts v. EPA*. EPA was not seeking to expand its permitting power. Rather, EPA felt compelled by the plain language of the statute to address all sources emitting greenhouse gases above the statutory thresholds and tried in good faith to fulfill its statutory obligations.¹⁷ EPA sought to implement the Clean Air Act permitting power reasonably and judiciously by writing the Tailoring Rule to initially limit the permitting requirement to only large sources.¹⁸ EPA also outlined a plan to develop streamlining measures, including the possible use of general permits, to enable EPA and the states to potentially implement the permitting requirements for scores of additional sources down the road.¹⁹ In *UARG v. EPA*,²⁰ although the Supreme Court rejected one aspect of EPA’s interpretation of the statute, the Court effectively agreed with EPA’s approach of focusing on major emitters, as well as EPA’s motivation to avoid burdensome and absurd results. In the big picture, EPA considered the Supreme Court’s decision to have resulted in a favorable outcome that allows the agency to address greenhouse gas pollution without unnecessarily burdening myriad small sources. The Clean Air Act permitting programs are being implemented successfully today, mainly by states that have primacy, as Prevention of Significant Determination permits now contain limitations on greenhouse gas emissions based on the application of Best Available Control Technology.

The notion that agencies constantly seek to aggrandize power by expanding the reach of their permitting jurisdiction is also belied by several examples from the water context. Biber and Ruhl accurately point out that EPA has tried on several occasions to exempt certain activities from Clean Water Act NPDES permitting, only to have the courts read the statute to require permitting.²¹ Indeed, one of the key early decisions in this area arose when EPA attempted to exempt certain stormwater discharges from permitting due to the “intolerable permit load” of covering hundreds of thousands of sources; the environmental challengers advocated that EPA adopt general permits instead—an approach subsequently endorsed by the courts.²²

14. 564 U.S. 410, 428 (2011). Even Epstein seems to acknowledge the limits of the common-law tort construct for widespread environmental harms in his later scholarship. See Biber & Ruhl, *supra* note 3, at footnote 297.

15. Biber & Ruhl, *supra* note 3, at 152.

16. Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, 75 Fed. Reg. 31514 (Jun. 3, 2010).

17. *Id.* at 31560-62.

18. Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule Step 3 and GHG Plantwide Applicability Limits, 77 Fed. Reg. 41051 (July 12, 2012).

19. 75 Fed. Reg. at 31577; Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule Step 3 and GHG Plantwide Applicability Limits, 77 Fed. Reg. 14226, 14250-55 (Mar. 8, 2012) (proposed rule).

20. *Utility Air Regulatory Group v. EPA*, 134 S. Ct. 2427 (2014).

21. See Biber & Ruhl, *supra* note 3, at 148.

22. *NRDC v. Costle*, 568 F.2d 1369, 1381 (D.C. Cir. 1977).

As these examples illustrate, the history of permitting is not a simple narrative. Agencies frequently find themselves caught between competing legal and practical imperatives while seeking the most efficient and effective administrative solutions to complex problems. That leads to our next several points highlighting a number of interesting and innovative EPA initiatives related to permitting.

V. Misconception #5—Individual Permitting Regimes Are “Old School” and Not Susceptible to Innovation

While general permits, where authorized and appropriate, have many potential advantages, one consideration missing from Biber and Ruhl’s framework is the extent to which agencies use the flexibility afforded by individual permits to explore innovative approaches to benefit permittees and protect and empower communities affected by pollution.

Individual permits can give agencies more flexibility to pilot new approaches—flexibility that would not necessarily exist in a general permitting regime. To cite one example, EPA and the Massachusetts Department of Environmental Protection developed a unique NPDES permit for the Kendall Station Power Plant in Cambridge, Massachusetts that reduced its harmful heat discharge into the Charles River by sending the steam it generated across the river to provide heat for consumers in Boston instead of building cooling towers. Embodying a sustainable pollution reduction strategy, this permit generated additional revenue for the permittee and created indirect air quality benefits, all while protecting aquatic life.²³ Such a nuanced and tailored approach would obviously be less workable in a general permit regime.

The flexibility of permitting has also allowed innovation in areas such as the adoption of advanced monitoring technologies. For example, continuous water quality monitoring is now feasible—and has been required in some permits—because of technological advances in sensors, which can detect the relevant metrics accurately and reliably. Real-time monitoring information on parameters such as temperature, flow, and pH can support continued permit compliance and allows for prompt action to address environmental concerns.²⁴

Through innovative permitting, EPA has also looked for ways to empower communities by improving transparency through web notification requirements, among other means. The NPDES permit for the City of Seattle, for example, requires the city to inform citizens of combined sewer overflows through a real-time public

notification website. And the NPDES permit for Logan Airport in Boston requires the Massachusetts Port Authority to make the results of water quality sampling at airport outfalls available on its website.²⁵ Individual permits allow agencies to assess site-specific needs and implement new approaches where needed; this also tests the feasibility, cost, and value of innovations in practice to help determine whether they should be replicated and applied more widely.²⁶

Individual permits can also provide a vehicle for piloting creative approaches to address environmental justice. For example, agencies can facilitate meaningful public engagement during the development of individual permits that allows the agency and permit applicant to better understand and serve the needs of overburdened communities. To be sure, general permits also provide an opportunity for the public and prospective permittees to provide input through notice and comment. However, individual permits can address factors and sensitivities specific to a given project and community circumstances.

For example, while EPA was developing a Clean Air Act permit for the Energy Answers Arecibo Power Plant in Puerto Rico, the community surrounding the facility raised concerns about the potential for disproportionate risk of lead exposure because there was also a battery recycling facility nearby. To address concerns raised during public engagement over the permit, the plant undertook additional analyses and volunteered to install a monitor to measure lead levels in the community’s ambient air.

More recently, EPA released a new Environmental Justice Screening and Mapping Tool called “EJSCREEN,” which provides access to demographic and environmental information, helping users identify areas with minority and/or low-income populations and potentially elevated environmental burdens that may warrant further consideration, analysis, or outreach.²⁷ Through such tools, which harness the power of information and technological advances, permit-writers can identify permit applications that may benefit from novel approaches. For these reasons, EPA’s draft “EJ 2020 Action Agenda Framework” includes innovation in permitting as an area that EPA plans to focus on to improve the health and environment of overburdened communities.²⁸

23. See George Wyeth & Beth Termini, *Regulating for Sustainability*, 45 LEWIS & CLARK ENVTL. L. REV. 663, 679-80 (2015) (also discussing “flexible” permits that reduce the need for frequent permit modifications by providing facility-wide limits or by pre-authorizing facility modifications at the time a permit is issued).

24. For more information on advanced monitoring, see Cynthia Giles, *Next Generation Compliance*, 45 ELR 10205 (Mar. 2015).

25. For more information on these and other examples, see U.S. EPA NPDES Compendium of Next Generation Compliance Examples (Sept. 2015), available at <https://www.epa.gov/sites/production/files/2015-06/documents/npdesnextgencomplcompendium.pdf>.

26. States are innovating in this space as well. For example, Minnesota has issued permits for four sand processing facilities that require fence-line monitoring for particulate matter. More information is available at <https://www.pca.state.mn.us/air/air-monitoring-minnesota-silica-sand-facilities/#winona-b9a765fc>.

27. Available at <https://www.epa.gov/ejscreen>.

28. U.S. EPA Draft EJ 2020 Action Agenda Framework (June 15, 2015), available at <https://www3.epa.gov/environmentaljustice/resources/policy/ej2020/draft-framework.pdf>.

VI. Misconception #6—Permitting Is Bureaucratic and Filled With Paperwork

Archaic, burdensome permitting may be the stereotype, but it doesn't have to be the reality. At a programmatic level, EPA is seeking ways to modernize its permit regimes by standardizing best practices and capturing the benefits of new technology. Notably, EPA is working with states through an effort known as "E-Enterprise for the Environment" to leverage technology and provide tools that streamline the implementation of environmental programs including permitting.²⁹

As one of the highlights of this effort, in 2013, EPA established a new policy setting forth electronic reporting as the default standard in developing new regulations.³⁰ E-Reporting goes beyond a regulated entity e-mailing a PDF of a document. Rather, e-reporting is a system of electronic tools that guide the regulated entity through the reporting process, often with built-in compliance assistance and data quality checks. In short, electronic reporting brings permitting into the digital age.

One of EPA's key achievements in this area is the October 2015 promulgation of a rule requiring electronic reporting for NPDES permittees.³¹ The rule will allow EPA to use 21st century technology and analytics to evaluate electronically submitted monitoring data in a timely and efficient way. EPA's rule will also ease the permitting process for facilities covered by general permits, who will seek coverage electronically. Even before this rule, states had begun moving in this direction by offering electronic reporting tools as well.

Electronic submissions save time and resources for permittees and regulators while increasing data accuracy and improving compliance. This modern approach enhances transparency by providing greater clarity on who is and who is not in compliance and generating a complete, timely, nationally-consistent set of data about the program. When the rule is fully implemented, both NPDES permittees and regulatory agencies will save money and time.

Through initiatives like electronic reporting, regulators can use improved data and the resources saved from reduced paperwork burden to target the most serious water quality and compliance problems. This rule will also make it easier for EPA to provide a full picture to the public about the performance of permitted facilities and water quality in their communities.

VII. Misconception #7—Information Collected During Permitting Is Underutilized

Biber and Ruhl acknowledge that permits can be a tool for developing information, but comment that "there is no guarantee that the information that is gathered will be effectively used, or that the agency will even cumulate the data across permit applications."³² EPA, however, fully recognizes the value of permitting for collecting, analyzing, and disseminating data. EPA has launched a number of efforts to realize the potential of data collected from permittees. Since 2002, for example, EPA has made permit, compliance, and enforcement information available to the public on its Enforcement and Compliance History Online (ECHO) website.³³ ECHO shares data on air emissions, surface water discharges, hazardous waste, and drinking water systems and allows users to explore facilities, create maps, and analyze trends.

As another example, EPA's MyWATERS Mapper dynamically pulls together a variety of data sources and displays snapshots of water data, such as the status of NPDES permits overlaid with water quality assessments, water impairments, watershed boundaries, and water infrastructure needs. The user-friendly tool also enables interested members of the public to create customized maps of water information relevant to their communities.³⁴ The MyWATERS Mapper is part of EPA's MyEnvironment website, which displays information collected across the range of environmental statutes.³⁵

Most recently, in February 2016, EPA released a new drinking water mapping application for source waters, DWMAPS, which also uses monitoring data submitted by NPDES permittees as one of its inputs.³⁶ This application allows users to map potential sources of contamination and locate facilities discharging specific contaminants.

Such initiatives are not limited to the water program. On the air side, for example, the Air Markets Program Data Tool allows the public to search by criteria or region to find information about emissions, allowances, and compliance for facilities.³⁷ As these examples attest, EPA is continually looking for ways to harness the power of information in the digital age to collect and share data in ways that will help inform and empower communities.

VIII. Conclusion

In sum, we certainly agree with Biber and Ruhl that "the actual experience of permitting as practiced by agencies is rich with evidence that the problems motivating Epstein's pessimistic assessment are neither inevitable nor insur-

29. Thomas S. Burack & A. Stanley Meiburg, *Collaborative Federalism*, ENVTL. E., May-June 2016, at 23, 26.

30. Memorandum, E-Reporting Policy Statement for EPA Regulations (Sept. 30, 2013), available at <http://www.epa.gov/sites/production/files/2016-03/documents/epa-ereporting-policy-statement-2013-09-30.pdf>.

31. NPDES Electronic Reporting Rule, 80 Fed. Reg. 64064 (Oct. 22, 2015).

32. Biber & Ruhl, *supra* note 3, at 187.

33. Available at <https://echo.epa.gov/>.

34. Available at <http://watersgeo.epa.gov/mwml/>.

35. Available at <https://www3.epa.gov/enviro/myenviro/>.

36. For more information, see <https://www.epa.gov/sites/production/files/2015-11/documents/dwmaps-overview.pdf>.

37. Available at <https://ampd.epa.gov/ampd/>.

mountable.” Biber and Ruhl focus on the use of general permits as a major reason for that optimistic assessment, suggesting that “a wide range of environmental problems plausibly might be better resolved by general permits to address the challenges we identify. . . .”³⁸ Without necessarily endorsing their precise prescriptions, we applaud them for producing a thoughtful framework for considering the relative pros and cons of general and individual permit-

ting regimes. But general versus individual permitting is only one dimension of a larger picture. In the digital age, electronic data can be collected and shared at the touch of a button, and the technology of monitoring and reporting is constantly advancing. Agencies can and will adopt innovative approaches to improve the efficiency and efficacy of permits, whatever their form.

38. Biber & Ruhl, *supra* note 3, at 230; *see also id.* Section III, at 212, “The Case for General Permits.”

C O M M E N T

General Permits: An Environmental Minefield

by William W. Sapp, April S. Lipscomb, and M. Allison Burdette*

Bill Sapp is a Senior Attorney with the Southern Environmental Law Center. April Lipscomb is an Associate Attorney at the Southern Environmental Law Center. Allison Burdette is an Associate Professor in the Practice of Business Law at Emory University's Goizueta Business School.

At bottom, Eric Biber and J.B. Ruhl argue in their recent article that general permits are a panacea for many of the difficult permitting issues that modern administrative agencies face. We have no quarrel with their conclusion in theory; however, in practice—at least in the environmental arena—agencies such as the U.S. Army Corps of Engineers (“Corps”) often abuse general permits.

In fact, in the case of the Corps’ wetlands regulatory program, which Biber and Ruhl zero in on, the Corps has every incentive to exceed the bounds of its general permitting authority. General permits dramatically reduce the resources needed to run the Corps’ regulatory program, as well as help quell the political heat generated from that program. Furthermore, because environmental groups can bring only so many challenges to the Corps’ nationwide permits—after all there are 52 of them¹—the Corps has little incentive to dial back its abuse of these general permits. Until Biber and Ruhl can devise a plan to stave off such abuses, they should be wary of touting the advantages of general permits too much.

In this Comment, we focus on one general permit the Corps currently is abusing, Nationwide Permit 13, which the Corps uses to authorize shoreline armament structures such as bulkheads, sea walls, and revetments.² We could have chosen another Corps general permit,³ but since three environmental groups are currently challenging NWP 13 in the District Court for the District

of Columbia,⁴ and since a decision by that court is expected any day, we thought it would be interesting to look closely at some of the ways the Corps is misusing NWP 13.

As Biber and Ruhl point out in their article, Section 404(e)⁵ authorizes the Corps to develop (through notice and comment rulemaking) general permits for categories of activities involving discharges of dredged or fill material.⁶ The activities, however, must be similar in nature and have *minimal adverse effects* on the environment both individually and cumulatively.⁷ Unfortunately, Congress failed to define the term “minimal” in Section 404(e). As we discuss below, this oversight has left the window open for the Corps to escape the congressionally intended confines of this provision.

I. Nationwide Permit 13 and How the Corps Uses It to Authorize Shoreline Armament Structures

For the most part, NWP 13 can be used only for bulkheads that are less than 500 feet in length, are less than about three feet in width,⁸ and do not disturb wetlands or marsh.⁹ However, district engineers are free under

*The authors would like to thank the following individuals for their contributions to this Comment: Stacy Grolimund, Todd Miller, and Dianne Hoskins.

1. 77 Fed. Reg. 10,184, 10,270 (Feb. 21, 2012).
2. A bulkhead is a wooden, steel, or concrete wall erected along a shoreline. A sea wall is a bigger and stronger bulkhead. And a revetment is a sloped bank covered in rock or construction debris. All of these structures are designed to stem erosion of the shoreline. In this comment, we use the term “bulkhead” to refer to all of these structures.
3. Two top contenders would be NWP 21 (which covers mountain top mining) and NWP 12 (which covers utility crossings). See 77 Fed. Reg. at 10,269–70.

4. On behalf of the National Wildlife Federation, the Savannah Riverkeeper, and the Ogeechee Riverkeeper, the Southern Environmental Law Center is currently challenging the validity of NWP 13. Amended Complaint, Nat’l Wildlife Fed. v. U.S. Army Corps of Eng’rs, Case No. 1:14-CV-01701-JDB (D.D.C. Dec. 29, 2014).
5. 33 U.S.C. § 1344(e).
6. Eric Biber & J.B. Ruhl, *The Permit Power Revisited: The Theory and Practice of Regulatory Permits in the Administrative State*, 64 DUKE L.J. 133, 138 (2014).
7. 33 U.S.C. § 1344(e).
8. The actual requirement provides as follows: “The activity will not exceed an average of one cubic yard per running foot placed along the bank below the plane of the ordinary high water mark or the high tide line, unless the district engineer waives this criterion by making a written determination concluding that the discharge will result in minimal adverse effects.” 77 Fed. Reg. at 10,272.
9. *Id.*

NWP 13 to waive each of these requirements.¹⁰ All a district engineer need do is prepare a written determination that the exceedance would not cause the activity to have more than minimal impacts on the environment.¹¹ So in effect these limits are meaningless. To bear this out, one district engineer used NWP 13 to authorize a 2,700-foot long bulkhead.¹² Other district engineers regularly use NWP 13 to permit bulkheads that are more than 1,500 feet long.¹³ While one might argue, albeit unconvincingly, that a 500-foot long bulkhead has only a minimal impact on the environment, there is no doubt that a 2,700-foot long bulkhead could never meet this minimal impacts restriction. Instead, the Corps should have processed this application, and many others, under its individual permit procedures, which Biber and Ruhl refer to as “specific permits,” ensuring adequate environmental review and public participation.

Bulkheads, sea walls, and revetments all adversely affect the environment. Whenever water meets land, very diverse and ecologically important ecosystems develop. Hydrophytic plants that can tolerate both land and water are found within this fringe, as well as animals such as turtles that rely on both land and water to survive. When inserted into these natural systems, bulkheads sever the land from the water and often destroy both the water and land components of the shoreline environment.

II. The Corps Has Turned the General Permit Approach on Its Head by Misinterpreting Section 404(e) and Using Compensatory Mitigation Improperly

Under a reasonable interpretation of Section 404(e), the Corps headquarters is required, working with its divisions and districts, to set the upper limits of what minimal impacts would mean across the country for each activity the Corps desires to regulate under a nationwide permit. For instance, if the Corps wanted to use a nationwide permit to authorize minor stream crossings, the Corps might decide that such a nationwide permit could be used to authorize only a stream crossing that

met the following two criteria: (1) the road could only be two lanes wide and (2) the stream crossed could have a water flow of no more than ten cubic feet per second. In so doing, the Corps would be concluding that a stream crossing built to these specifications would cause minimal impacts to the environment regardless of where it was built.

Under this reasonable interpretation of Section 404(e), these nationwide standards could be made more stringent by Corps divisions and districts. If, for example, a district were to determine that streams in its jurisdiction were particularly vulnerable to the effects associated with culverts, it might decide that a cap of five cubic feet per second would be more appropriate. If that were the case, the district could, after notice and comment within the district, attach a condition to the nationwide permit reducing the flow limit to five cubic feet per second.

But this is not how the Corps interprets Section 404(e). The Corps distorts the meaning of this statutory provision by only pretending to set national limits in its nationwide permits. Because the nationwide permits often allow district engineers to waive the limits imposed, the nationwide limitations are meaningless.¹⁴ As a result, in the case of NWP 13, the putative nationwide limit of 500 feet is ignored routinely. As stated above, at least one district engineer has determined that a bulkhead 2,700 feet in length would have minimal impacts on the environment.¹⁵ Another district engineer routinely used NWP 13 to authorize bulkheads the length of five football fields.¹⁶ These district engineers contend that by requiring mitigation for the impacts of these super bulkheads, the districts can reduce their impacts down to a minimal level. Under this approach, no bulkhead would ever have to be permitted under an individual permit. After all, in theory, even a mile-long bulkhead could be mitigated down to a minimal impact.

This approach is reminiscent of what occurred in the 1980s when applicants could secure Section 404 permits based primarily on the mitigation that they were willing to provide.¹⁷ This problem was addressed and seemingly fixed when the Environmental Protection Agency and the Corps entered into a memorandum of agreement (MOA) in 1990 that stated applicants would have to avoid wetland impacts where practicable and then minimize remaining impacts to the extent possible.¹⁸ Only

10. *Id.*

11. *Id.*

12. The District Engineer for the Charleston District in South Carolina recently determined that NWP 13 could be used to permit a 2,700-foot long bulkhead on Captain Sam's Spit. See Letter from Tina B. Hadden, Chief, Regulatory Division, Charleston District, U.S. Army Corps of Engineers, to Patrick Rogers, Thomas and Hutton Engineering Co. (Apr. 4, 2008) (on file with South Carolina Department of Health and Environmental Control).

13. In response to a questionnaire that Corps Headquarters sent to Corps districts in 2010, the Kansas City district stated that it had authorized 15 bulkheads and that their average length was 1,500 feet. Administrative Record at NWP022603, Nat'l Wildlife Fed. v. U.S. Army Corps of Eng'rs, Case No. 1:14-CV-01701-JDB (D.D.C. Mar. 12, 2015).

14. 77 Fed. Reg. at 10,188.

15. Letter from Hadden, *supra* note 12.

16. Administrative Record, *supra* note 13, at NWP022602.

17. Personal conversation between William Sapp, Senior Attorney, Southern Environmental Law Center, with anonymous Corps official (Mar. 2, 2016).

18. Memorandum of Agreement Between the Department of the Army and the Environmental Protection Agency Concerning the Determination of Mitigation Under the Clean Water Act Section 404 (b)(1) Guidelines 1 (1990), available at <http://www.epa.gov/cwa-404/memorandum-agreement> (last visited Mar. 7, 2016).

after completing these two steps could an applicant discuss mitigation.¹⁹ Although the MOA on mitigation was not written with nationwide permits in mind, its principles are applicable,²⁰ especially when the Corps is using general permits like NWP 13 to authorize bulkheads that are 2,700 feet long.

By allowing such mitigation “buy downs,” the Corps is rejecting the mitigation MOA and embracing the problems that the MOA was designed to cure. This approach leads to nonsensical outcomes. If, for instance, Corps district A were to require that an applicant seek an individual permit for a 2,000-foot bulkhead, the applicant would have to go through the avoidance/minimization/mitigation sequence set forth in the MOA.²¹ However, if district B were to authorize a similar 2,000-foot bulkhead under NWP 13, the applicant would simply have to mitigate the impacts of the bulkhead down to a minimal level. Where is the equity in such a system when two similarly situated applicants could be treated so differently depending on the views of the district engineers in command? Such disparities of treatment are not uncommon in this highly decentralized agency.²²

What’s more, the Corps does not require adequate mitigation for all of the impacts caused by bulkheads. Under NWP 13, the Corps typically requires mitigation only for impacts to wetlands. Wetland impacts represent only a portion of the impacts that bulkheads cause. As stated above, bulkheads sever upland ecosystems from their aquatic counterparts, often damaging or destroying both. Yet, when bulkheads do not disturb wetlands, the ecosystem-severing impacts of the bulkhead are rarely considered, much less mitigated. Thus, even when the Corps does use mitigation, it often misses the mark.

Another way the Corps distorts the restrictions of Section 404(e) is by allowing its divisions and districts to discard the nationwide permits developed by Corps headquarters in favor of more lenient homegrown versions. Referring back to the stream crossing example above, if a district decides that it wants to develop a regional general permit that has a stream flow limit of twenty cubic feet per second instead of the more restrictive headquarters’ limit of ten cubic feet per second, it is free to do so as long as the district allows the public to comment on the more

lenient regional general permit and the district engineer makes a determination that the more lax standard would still guarantee that the environment would suffer no more than minimal adverse impacts. While there is nothing in Section 404(e) that authorizes a district to promulgate a regional general permit that is more lenient than a nationwide permit, unfortunately for the environment, there is also nothing in Section 404(e) that explicitly states that this practice is improper.

III. The Corps Is Violating the Section 404(b)(1) Guidelines When It Permits Bulkheads Without First Considering Less Damaging Practicable Alternatives, Such as Living Shorelines

The Section 404(b)(1) Guidelines are a series of requirements that Congress directed the EPA and Corps to develop to ensure that the Section 404 regulatory program would be implemented in a consistent manner.²³ One requirement of the Guidelines is that before the Corps issues a permit, it must ensure that there is no alternative that would result in a less significant adverse impact on the aquatic ecosystem.²⁴ Over the last few decades such a practicable alternative has been identified and tested. That alternative is “living shorelines.”²⁵ A living shoreline is a bioengineered approach to enhancing a shoreline using natural components so that the shoreline can better withstand erosive forces. These natural components, depending on the site, can include such building blocks as native plants, sand or soil, oyster shells, coir logs, and rock.²⁶

If designed correctly, living shorelines preserve the connection between land and water that bulkheads destroy.²⁷ They can also enhance the shoreline ecosystem by adding structure to the shoreline that can serve as a place for oysters and other crustaceans to attach. With the crustaceans come fish, crabs, and other aquatic species.²⁸ The sloped shoreline and native plants can also serve as habitat for wildlife, ranging from beach mice to black bears. The diagram below provides a glimpse of what a well-constructed living shoreline might look like.

23. 33 U.S.C. § 1344(b)(1); 40 C.F.R. Part 230.

24. 40 C.F.R. § 230(a).

25. See Rachel K. Gittman et al., *Living Shorelines Can Enhance the Nursery Role of Threatened Estuarine Habitats*, 26 *ECOLOGICAL APPLICATIONS* 249, 250 (2016).

26. Virginia Institute of Marine Science, Center for Coastal Marine Management, *Living Shorelines: Why a Living Shoreline?*, <http://ccrm.vims.edu/livingshorelines/index.html> (last visited Mar. 8, 2014).

27. *Id.*

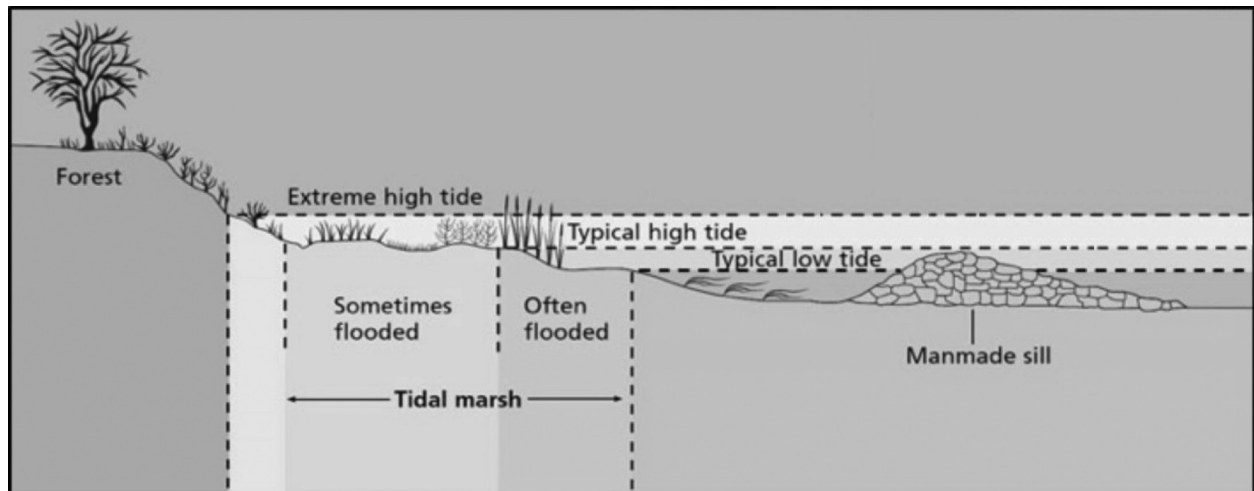
28. Gittman et al., *supra* note 25, at 258.

19. *Id.* at 3.

20. *Id.* at 1.

21. *Id.*

22. Administrative Record, *supra* note 13, at NWP022479–50.



Source: Living Shorelines Engineering Guidelines, Prepared by Jon K. Miller, Andrew Rella, Amy Williams, and Erin Sproule for New Jersey Department of Environmental Protection.

Living shorelines can also help shoreline ecosystems adapt to sea level rise. As water levels rise, the sloped banks of living shorelines allow marsh grasses to retreat to higher ground.²⁹ In contrast, marshes in front of bulkheads, with no higher ground to move to, drown.

Living shorelines help preserve marshes in other ways too. For instance, because living shorelines do not create a wall separating land from sea, sediment from the land can reach and replenish the soil in the marshes that is continually eroded by wave action.³⁰ Without this land sediment, the sea bed underneath these marshes becomes starved of soil and the marsh grasses eventually sink as the seabed lowers beneath them. Coupled with both the scouring and sea level rise effects of bulkheads discussed above, marshes located in front of bulkheads are destined to die a slow death. And, of course, with the dying marshes go the fisheries that depend on them,³¹ as well as the aesthetic appeal of the marshes themselves.³²

One of the requirements of the Section 404(b)(1) Guidelines is that any alternative considered must be “practicable.”³³ To be practicable, an alternative must be feasible, taking into account the cost of the alternative relative to the proposed project.³⁴ Because living shorelines often cost less to construct than bulkheads,³⁵ and because they are often more effective than bulkheads at addressing erosion both in the short-term and long-term, living shorelines meet the practicability test. The photographs below demonstrate how living shorelines can be more effective than bulkheads in the face of a punishing storm. In 2011, Dr. Rachel Gittman, who was then a doctoral student at the University of North Carolina, took pictures of a living shoreline and a bulkhead located approximately 100 yards from one another both before and after Hurricane Irene made landfall on the North Carolina coast. The results are telling.

29. See Rachel K. Gittman et al., *Marshes With and Without Sills Protect Estuarine Shorelines From Erosion Better Than Bulkheads During a Category 1 Hurricane*, 102 OCEAN & COASTAL MGMT. 94, 95 (2014).

30. Carolyn A. Currin et al., 2010, *Developing Alternative Shoreline Armoring Strategies: The Living Shoreline Approach in North Carolina*, in Hugh Shipman et al., eds., 2010, PUGET SOUND SHORELINES AND THE IMPACTS OF ARMORING—PROCEEDINGS OF A STATE OF THE SCIENCE WORKSHOP, MAY 2009, U.S. Geological Survey Scientific Investigations Report 2010-5254, p. 91, 94, available at http://aquaticcommons.org/14844/1/sir20105254_chap10.pdf (last visited Mar. 8, 2016).

31. By some estimates, 95 percent of the fish, crabs, and crustaceans that find their way to our dinner plates spend at least part of their juvenile lives in the marshes that line our shorelines.

32. The poet laureate, Sidney Lanier, best captured the beauty of the marsh environment in his 1898 poem “The Marshes of Glynn.” See Sidney Lanier, *The Marshes of Glynn*, in POEMS OF SIDNEY LANIER 14 (Mary Day Lanier ed., The University of Georgia Press 1999), available at <http://www.bartleby.com/42/809.html> (last visited Mar. 2, 2016).

33. 40 C.F.R. § 230.10(a).

34. *Id.* § 230.10(a)(2).

35. See Coastal Resources Division, Ga. Department of Natural Resources, <http://coastalgadnr.org/LivingShorelines>; Restore America’s Estuaries, available at <http://www.estuaries.org/>.



The two sites are located on Bogue Sound in Pine Knoll Shores, North Carolina. The photographs on the left were taken in May 2011. The photographs on the right were taken in September 2011, three days after Hurricane Irene struck the coast.

The storm surge that accompanied the hurricane destroyed the bulkhead, whereas it left the living shoreline unscathed. These photographs tell a powerful story and provide an example of why living shorelines must be considered as a practicable alternative to bulkheads in many situations. Until the Corps does so, it is not complying with the 404(b)(1) Guidelines.

IV. The Corps Also Violates the Section 404(b)(1) Guidelines When It Fails to Take the Cumulative Impacts of This NWP 13 Into Account

In the last decade alone, the Corps has used NWP 13 to authorize over 35,000 bulkheads.³⁶ If these bulkheads were lined up side-by-side, they would reach from the Atlantic Ocean to the Rocky Mountains—over 1,600 miles.³⁷ Yet, when the Corps authorizes bulkheads under NWP 13, it rarely considers cumulative impacts on a project-by-project basis. This violates the Section 404(b)(1) Guidelines, which provide that activities authorized by NWP 13 must have no more than minimal impacts both *cumulatively* and *individually*.³⁸

Considering the cumulative impacts of bulkheads is of great importance. For instance, as one seminal study on shoreline armament found, by 1997, bulkheads covered 30

percent of the shoreline of Mobile Bay, Alabama.³⁹ This percentage has increased markedly.⁴⁰ The study went on to reveal that these bulkheads, due to the scouring they cause in front of them, had destroyed a significant percentage of the intertidal zone, the beach that is exposed during low tide.⁴¹ This effect caused one Mobile fisherman to comment that the “tide don’t go out any more.”⁴² In other words, with the intertidal zone gone, the sea water in front of these bulkheads appears to never retreat. This “bath tub effect” is due to the cumulative impact of so many bulkheads lining the shore.⁴³ Until the Corps starts considering the cumulative effect of bulkheads, estuaries like Mobile Bay will continue to deteriorate—the marshes will disappear, the fisheries will decline, and the recreational opportunities will decrease.

One key reason that the Corps does not consider cumulative effects under NWP 13 is that the Corps simply does not know just how many bulkheads are authorized under this general permit. Under NWP 13, applicants can build bulkheads up to 500 feet in length without ever contacting the Corps, as long as the construction of the bulkhead does not disturb wetlands.⁴⁴ If the Corps does not know about the majority of bulkheads built, how can it possibly adequately consider the cumulative impacts of these bulkheads?

36. U.S. Army Corps of Engineers, Decision Document, Nationwide Permit 13, at 35 (Feb. 13, 2012) (estimating use of permit at 3,500 times per year), available at http://www.usace.army.mil/Portals/2/docs/civilworks/nwp/2012/NWP_13_2012.pdf (last visited Mar. 7, 2016).

37. Based on the Corps data, the Corps uses NWP 13 to authorize 3,500 bulkheads a year. The 1,600-mile figure was calculated as follows: 3,500 x 10 years x 250 feet (conservative estimate of the average length of bulkheads) ÷ 5,280 (feet in a mile) = 1,657 miles.

38. 40 C.F.R. § 230.7(a)(3).

39. Scott L. Douglass & Bradley H. Pickel, *The Tide Doesn't Go Out Anymore—The Effect of Bulkheads on Urban Bay Shorelines*, 67 *SHORE & BEACH* 19, 21 (1999).

40. Stephen C. Jones et al., Geological Survey of Alabama, Comprehensive Shoreline Mapping, Baldwin and Mobile Counties, Alabama, Phase 1.

41. Douglass & Pickel, *supra* note 39, at 23.

42. Personal Conversation between William Sapp, Southern Environmental Law Center, and Dr. Scott Douglass, founder of South Coast Engineering, LLC (Feb. 24, 2016).

43. Douglass & Pickel, *supra* note 39, at 24.

44. Nationwide Permit 13, *supra* note 36, at 1–2.

Even when the Corps does know about a bulkhead before it is constructed, its track record for considering cumulative impacts is not impressive. For example, the bulkhead at issue in the current challenge of NWP 13 was constructed close to another existing bulkhead that was over 400 feet in length.⁴⁵ In processing the NWP 13 authorization for the proposed bulkhead, the Corps never considered the cumulative impact that the two bulkheads might have on the surrounding riverine environment.⁴⁶ Although this example may be the exception rather than the rule, based on the Corps' lax treatment of NWP 13 in other regards, it is more likely that this situation is par for the course.

V. Conclusion

In a matter of days, the Corps will propose a new NWP 13, as it does every five years. The public comment period will commence when the proposed permit is published. It is time to hold the Corps accountable and insist that the Corps: (1) comply with the minimal impact stricture of Section 404(e), (2) treat living shorelines as a practicable alternative, and (3) consider the cumulative impacts of bulkheads on the environment.

As to Biber and Ruhl's supportive words on general permits, we completely agree that general permits are a necessary tool that should be encouraged, but proper bounds need to be established to deter their abuse. Essentially, Biber and Ruhl posit that agencies should consider general permits when (1) entry barriers are high, (2) activity-specific information is not needed, (3) a one-size-fits-all authorization would be appropriate, (4) specific permits would cause undo political resistance, (5) public participation would not be helpful, and (6) a specific permit would cause an undo administrative burden on the regulatory agency. Although these criteria would be helpful to any agency deciding to issue general permits, Biber and Ruhl leave out the most important criterion—would a general permit yield a substantially similar result to a specific permit under the same circumstances. If this is not the case, the agency should not issue a general permit.

Only after the comment period has run and a new, hopefully improved, NWP 13 emerges will we be able to determine whether NWP 13 meets the six criteria set forth by Biber and Ruhl, as well as the criterion set forth by us, namely, that the newest version of NWP 13, on a consistent basis, would not yield results substantially different than individual permits under the same circumstances.⁴⁷

45. Amended Complaint, *supra* note 4, at 30.

46. Administrative Record, *supra* note 13.

47. Biber & Ruhl, *supra* note 6.

A R T I C L E

Rethinking Health-Based Environmental Standards and Cost-Benefit Analysis

by Michael A. Livermore and Richard L. Revesz

Michael A. Livermore is an Associate Professor of Law, University of Virginia Law School and Richard L. Revesz is the Lawrence King Professor of Law and Dean Emeritus, New York University School of Law.

W*hitman v. American Trucking Associations, Inc.*, is understood by advocates and commentators across the political spectrum to hold that the U.S. Environmental Protection Agency (EPA) may not consider costs when setting National Ambient Air Quality Standards (NAAQS) under the Clean Air Act.¹ This decision was lauded by protection-oriented groups as a major victory for public health and the environment, and severely criticized by regulated industry and anti-regulatory groups for imposing burdensome costs in pursuit of unrealistic levels of environmental safety.² Both sides therefore seem to agree that were the EPA to engage in cost-benefit analysis of its proposed air quality standards, the results would be more industry-friendly and less environmentally protective.

The standard reading of *Whitman*, and its implementation by EPA, gives rise to two interrelated pathologies. We call the first the stopping point problem. Frequently, the complete elimination of public health risks from pollution could be accomplished only by banning all emissions. Such stringent standards would lead to widespread social dislocation that even strongly pro-environmental commentators regard as undesirable.³ But when costs cannot be considered, it is difficult to justify any stopping point other than zero. The result is an elaborate obfuscation of the true

reasoning underlying the agency's decision, undermining core values of the administrative state.

The second problem, which we refer to as the inadequacy paradox, arises because, contrary to the conventional account, the requirement that EPA set the NAAQS without considering costs has *not* led to more stringent environmental standards. We examine the regulatory impact analyses conducted for the most recent NAAQS rulemakings and find that, in all of the cases where the relevant data is available, the standards set by EPA were *less* stringent than those that would have resulted from the application of cost-benefit analysis.⁴ Ironically, by eliminating costs from EPA's calculation, *American Trucking* promoted environmental standards that imposed sub-optimally low costs on industry. And the application of cost-benefit analysis, a methodology that remains suspect in many environmentalist circles,⁵ would have resulted in cleaner air.

We argue that health-based standards should never be less stringent than the standards determined by cost-benefit analysis, thereby solving the inadequacy paradox. The central justification for health-based standards is that the level of regulatory protection should not be compro-

The full version of this Article was originally published as: Michael A. Livermore & Richard L. Revesz, Rethinking Health-Based Environmental Standards, 89 N.Y.U. L. REV. 1184 (2014). It has been excerpted and updated with permission of New York University Law Review, Michael A. Livermore and Richard L. Revesz. Please see the full article for footnotes and sources.

1. 531 U.S. 457 (2001).
2. Compare Editorial, Clean Air—and Congress—Wins, WASH. POST, Feb. 28, 2001, at A24 (“[T]he court handed public health a major victory . . .”), with Katherine A. Kelley, MMS Shop Talk, MODERN MACHINE SHOP, Apr. 30, 2001, at 42 (relating the “profound disappointment” of the National Association of Manufacturers).
3. See DOUGLAS A. KYSTAR, REGULATING FROM NOWHERE 20 (2010) (“Risk-risk, health-health, and environment-environment trade offs may be in some sense inevitable, as the economist reminds us, but they are *regrettably* so.”).

4. EPA prepares regulatory impact analyses (RIAs) for the NAAQS, even though they do not formally consider them during the rulemaking process. Throughout this Article, we assume that these analyses would not be substantially different in a counterfactual situation where they were used as the basis for the final rulemaking. We were unable to undertake this analysis for the carbon monoxide standard because no RIA was performed during the most recent review of the carbon monoxide standard in August 2011. E-mail from Tom Walton, Economist, Air Benefit & Cost Group, HEID/OAQPS/OAR/EPA (Sept. 12, 2012) (on file with the *New York University Law Review*). EPA had performed an RIA during its 1985 review of the standard but did not monetize the benefits. See U.S. ENVTL. PROT. AGENCY, REGULATORY IMPACT ANALYSIS OF THE NATIONAL AMBIENT AIR QUALITY STANDARDS FOR CARBON MONOXIDE, EPA-450/5-85-007, 19 (1985). This version updates the analysis in the original article to include the 2015 ozone standard. See *infra* note 42.
5. See RICHARD L. REVESZ & MICHAEL A. LIVERMORE, RETAKING RATIONALITY: HOW COST-BENEFIT ANALYSIS CAN BETTER PROTECT THE ENVIRONMENT AND OUR HEALTH 9 (2008) (noting that the “liberal camp” is skeptical of cost-benefit analysis which it generally views as “a technique that has historically been invoked to justify deregulation or less stringent regulation”).

mised by cost considerations. The current status quo turns this argument on its head, producing health-based standards that are less stringent than those that would result had cost been properly considered. *American Trucking* should not be interpreted as standing in the way of using cost-benefit analysis as a regulatory floor. Implementation of this alternative reading would also relegate the stopping point problem to the background because cost-benefit analysis would frequently be the operative principle used by the agency to set the NAAQS.

I. Approaches to Environmental Standard Setting

The major U.S. environmental statutes contain three principal approaches for determining the stringency of environmental protection: cost-benefit standards, feasibility standards, and health-based standards. Cost-benefit analysis, in its most general form, places both costs and benefits along a common metric and supports the standard that maximizes net benefits (the difference between benefits and costs).⁶ As practiced in the United States over the past several decades, cost-benefit analysis is grounded on a welfare economic conception of social good and measures net benefits through preference satisfaction, determining the desirability of a policy based on values assigned by those who are benefited and burdened by that policy.⁷ Uncertainty and risk are dealt with through a rational utility maximization framework based on expected outcomes, taking account of risk aversion when appropriate.⁸

There is a lengthy and contentious literature on cost-benefit analysis and its normative desirability. Defenders of cost-benefit analysis include Professor Cass Sunstein,⁹ who served as the OIRA Administrator under President Barack Obama, and Justice Stephen Breyer,¹⁰ who has argued that tools like cost-benefit analysis can rationalize the regulatory process. Critics include Professors Lisa Heinzerling¹¹ and Douglas Kysar,¹² who maintain that cost-benefit analysis

is indeterminate, includes questionable moral assumptions, and divorces rulemaking from the democratic process.

Critics of cost-benefit analysis have themselves been frequently criticized for lacking a normatively attractive alternative.¹³ One response they have offered is feasibility standards, the second major approach to setting environmental regulation. Professor David Driesen, a strong advocate of feasibility standards, defines them as requiring “stringent regulation” subject to constraints on “physically impossible environmental improvements” and standards “so costly that they cause widespread plant shutdowns.”¹⁴ Professors Eric Posner and Jonathan Masur recently offered a persuasive argument that feasibility standards are normatively undesirable because they lead to “significant problems of over- and underregulation.”¹⁵

Health-based standards, the subject of this Article, are the third principal approach to determining the stringency of environmental regulation. These standards seek either the entire elimination of a public health risk or, failing that, the achievement of what is deemed to be an acceptable level of risk.¹⁶ They thus differ from cost-benefit standards because they do not (explicitly) trade off health improvements against competing social priorities such as costs. They differ from feasibility standards because they are not constrained by what a particular industry could achieve without going out of business.

II. Stopping Point Problem

When setting the NAAQS, EPA faces choices that it cannot resolve on health considerations alone. These decisions require the agency to identify a stopping point for regulatory stringency: a limit to the percentage of the population that will be protected; a level of scientific uncertainty about exposure-health relationships that will be tolerated; and the minimum health effect that will be deemed acceptable. Because the agency can take only health into consideration, it cannot undertake the balancing of competing factors that is inevitably required to answer these questions.

Under the Clean Air Act, EPA is directed to set both primary and secondary NAAQS based on a “criteria” document that analyzes the most current scientific infor-

6. Michael A. Livermore, *Can Cost-Benefit Analysis of Environmental Policy Go Global?*, 19 N.Y.U. ENVTL. L.J. 146, 150 (2011).

7. See Lewis A. Kornhauser, *On Justifying Cost-Benefit Analysis*, 29 J. LEGAL STUD. 1037, 1039 (2000) (“[I]ndividual well-being is understood as the satisfaction of subjective preferences; in practice these subjective values are inferred from market choices of individuals or are elicited through survey techniques”).

8. *Id.* at 1039–44.

9. CASS R. SUNSTEIN, *THE COST-BENEFIT STATE: THE FUTURE OF REGULATORY PROTECTION* 20 (2002).

10. STEPHEN BREYER, *BREAKING THE VICIOUS CIRCLE: TOWARD EFFECTIVE RISK REGULATION* 68–69 (1993).

11. FRANK ACKERMAN & LISA HEINZERLING, *PRICELESS: ON KNOWING THE PRICE OF EVERYTHING AND THE VALUE OF NOTHING* 8–11 (2004) (“[F]ormal cost-benefit analysis often hurts more than it helps: it muddies rather than clarifies fundamental clashes about values.”).

12. KYSAR, *supra* note 3, at 20 (arguing that cost-benefit analysis “offers the implicit and misleading message that our needs consist only of better data and more-rigorous techniques of valuation”).

13. See Jonathan S. Masur & Eric A. Posner, *Against Feasibility Analysis*, 77 U. CHI. L. REV. 657, 659–60 (2010) (“[C]ritics have never been very clear about what decision procedure they prefer to CBA.”).

14. David M. Driesen, *Distributing the Costs of Environmental, Health, and Safety Protection: The Feasibility Principle, Cost-Benefit Analysis, and Regulatory Reform*, 32 B.C. ENVTL. AFF. L. REV. 1, 9 (2005).

15. Masur & Posner, *supra* note 13 at 704.

16. See David M. Driesen, *Should Congress Direct the EPA to Allow Serious Harms to Public Health to Continue?: Cost-Benefit Tests and NAAQS Under the Clean Air Act*, 11 TUL. ENVTL. L.J. 217, 220–21 (1998) (noting that in the context of setting the NAAQS, “we must either choose a zero level for pollutants or recognize some element of discretion in deciding what constitutes an adequate margin of safety”).

mation on the air pollutant.¹⁷ The primary NAAQS must be set at the level “requisite to protect the public health” with an “adequate margin of safety.”¹⁸ The secondary NAAQS must be set at the level “requisite to protect the public welfare from any known or anticipated adverse effects associated with the presence of such air pollutant in the ambient air.”¹⁹ NAAQS are set uniformly across the entire country.²⁰ The prohibition on the consideration of costs in the setting of the NAAQS is longstanding, dating back to the D.C. Circuit’s 1980 decision in *Lead Industries Association v. EPA*.²¹ The court reasoned there that if Congress had intended for EPA “to be concerned about economic and technological feasibility, it [would have] expressly so provided.”²²

In its very first NAAQS proceeding, EPA set the standard decisionmaking template that has remained in place for nearly four decades. In 1978, EPA set the NAAQS for lead, adopting a threshold-based approach that sought to establish “a safe level of total lead exposure.”²³ To find the threshold, the agency engaged in a “critical population—critical effect” inquiry, designed to protect the most sensitive individuals from the harmful effect occurring at the lowest concentration. The logic was that if the most sensitive population was protected, everyone else would be protected as well. EPA’s analysis contained three principal steps. The first identified a critical effect within a critical population, the second linked that effect with an ambient environmental concentration, and the third identified an averaging methodology for environmental monitoring.

For the first step, EPA chose young children, between the ages of one and five, as the critically sensitive population, and lead-induced elevation of erythrocyte protoporphyrin (“EP elevation”) as the critical effect.²⁴ For the second step, EPA first determined a lead level in blood above which the critical population would suffer from the critical effect, settling on 30 µg/dL.²⁵ EPA then decided that the standard should keep 99.5% of the target population below 30 µg/

dL.²⁶ EPA found that the necessary target mean population blood lead level to achieve this goal was 15 µg/dL.²⁷ EPA selected an air-to-blood ratio of 1 to 2, meaning that a 1 µg/m³ increase of the level of lead in air increases the level of lead in blood by 2 µg/dL.²⁸

Lead in blood comes not only from exposure to lead in air, but also to lead exposure from non-air sources, such as children ingesting paint chips.²⁹ So, EPA subtracted the concentration attributable to non-air sources from the total permissible concentration. EPA selected 12 µg/dL as the non-air source contribution to use in the determination of the NAAQS. Subtracting 12 µg/dL from 15 µg/dL left 3 µg/dL as the allowable airborne lead contribution in the blood, which was then divided by 2 (the air-to-blood ratio) arriving at 1.5 µg/m³ as the maximum permissible concentration of lead in air.

At each of these decision points, a higher level of safety could have been achieved. Consider the definition of safe blood levels. To arrive at the target mean, the agency acknowledged that blood lead levels vary across a population and set the mean level so that 99.5% of the population would fall below critical threshold. But the selection of 99.5% represents a choice. The agency instead could have selected 99.9%, or 90%, or any other arbitrary stopping point. At the level selected by EPA, the vast majority of the population, of course, was protected. But 0.5% of the population was not. EPA found that in the population of “children in central urban areas where air lead was at the standard level,” 20,605 children would end up with levels of lead in blood above 30 µg/dL.³⁰

The agency’s other decisions in setting the lead NAAQS have a similar feature. The blood lead level attributable to non-air lead sources is an example. Some of the studies cited by the agency found that the non-air contribution was as high as 14.4 µg/dL.³¹ If EPA had selected that value, holding all other parameters constant, 0.6 µg/dL would have been the allowable increment from air sources. With a 1:2 air-to-blood ratio, the standard would be 0.3 µg/m³, five times more stringent than the standard that was eventually adopted. The EPA could also have chosen other, more protective critical population or critical effects. For example, a more sensitive population would probably have consisted of even younger children (perhaps newborns) or children with an additional condition complicating their situation (such as infants suffering from iron deficiency or malnutrition diseases).³² Each of these alternative populations could have served as a basis for setting the ambient lead standard.

17. 42 U.S.C. §§ 7408(a)(2), 7409(a) (2012).

18. *Id.* § 7409(b)(1).

19. *Id.* § 7409(b)(2). “Welfare” is defined as including, inter alia, “effects on soils, water, crops, vegetation, man-made materials, animals, wildlife, weather, visibility, and climate, damage to and deterioration of property, and hazards to transportation, as well as effects on economic values and on personal comfort and well-being, whether caused by transformation, conversion, or combination with other air pollutants.” *Id.* § 7602(h).

20. In particular, the NAAQS do not take into account local population concentrations or the ease with which ambient concentrations can be achieved. See James E. Krier, *The Irrational National Air Quality Standards: Macro- and Micro-Mistakes*, 22 UCLA L. REV. 323, 323–25 (1974) (stating that NAAQS are uniform and describing a particularly costly application of that rule in Los Angeles).

21. 647 F.2d 1130 (D.C. Cir. 1980).

22. *Id.* at 1148.

23. Lead: Proposed National Air Ambient Air Quality Standard, 42 Fed. Reg. 63,076, 63,079 (proposed Dec. 14, 1977) (to be codified at 40 C.F.R. pt. 50) [hereinafter Lead 1977 Proposed Rule] (“The threshold for a particular health effect is considered to be the blood lead level at which the effect is first detected.”).

24. *Id.* at 63,077–78.

25. National Primary and Secondary Ambient Air Quality Standards for Lead, 43 Fed. Reg. 46,246, 46,253 (Oct. 5, 1978) (to be codified at 40 C.F.R. pt. 50) [hereinafter Lead 1978 Final Rule].

26. See *id.* at 46,251 (responding to comments that agency’s proposed standard “incorporat[ed] an excessive margin of safety”).

27. *Id.*

28. *Id.* at 46,250, 46,254.

29. See *id.* at 46,252–54 (discussing the issue of non-air sources of lead and methodology for calculating air levels).

30. See *id.* at 46,255.

31. See *id.* at 46,254.

32. Some comments noted that “within the general population of children there were subgroups with enhanced risk due to genetic factors, dietary deficiencies, or residence in urban areas.” *Id.* at 46,252.

At each stage of its decisionmaking, the agency was faced with choices that would have justified a more stringent standard. If the only relevant factor under consideration was reducing health risks from lead exposure, EPA *would* have selected a more stringent standard. Some countervailing factor must have influenced that agency's decision, but what that factor is cannot be discerned from the administrative record.

This same problem continues to be present. Indeed, in recent rulemakings, the agency acknowledged this difficulty, recognizing that it is required to perform an inquiry that gives it inadequate criteria for a final decision. For example, in setting the 2008 lead standard, EPA recognized that with regards to IQ loss in children, "there are currently no commonly accepted guidelines or criteria within the public health community that would provide a clear basis for reaching a judgment as to the appropriate degree of public health protection that should be afforded."³³ Similarly, in the sulfur dioxide final rule, EPA acknowledged that with regards to the level of exposure, "there is no bright line clearly mandating the choice of level within the reasonable range proposed," but rather the "choice of what is appropriate within this reasonable range is a public health policy judgment."³⁴ The essence of what EPA calls a "policy judgment" is deciding how many individuals will be left unprotected. Of course, if only public health considerations were relevant, protecting more would always be better. And without considering the non-health consequences of a rule, such as the compliance costs, any decision to leave part of the population unprotected is essentially incoherent.

EPA currently treats each of the six contaminants subject to the NAAQS as non-threshold contaminants. For such contaminants, it is easy to see why EPA cannot make a coherent choice on the basis of health considerations alone. But, as demonstrated above, the problem is not confined to non-threshold contaminants. In 1978, EPA treated lead as a threshold contaminant. Even for pollutants assumed to have a threshold, no non-zero standard would protect every person with absolute certainty. So even for these pollutants, the agency is left with no option but to decide what proportion of the population to place beyond the threshold, exposed to a public health harm. And there is no coherent way to perform this inquiry if health is the only factor that the agency can consider.

In the *American Trucking* litigation, the D.C. Circuit recognized the nature of the stopping point problem and found that EPA lacked guidance for how to determine "how much is too much" pollution under the NAAQS.³⁵ It sought to resolve this dilemma by finding the statute

unconstitutional.³⁶ The Supreme Court rejected the D.C. Circuit's holding that the NAAQS health-based standard provided the agency with an unconstitutionally broad delegation of power.³⁷ There is much to recommend in the Court's fairly circumspect interpretation of the non-delegation doctrine, given the reality that in a complex society, substantial discretion for administrative agencies is a necessary fact of life.

The real problem is not the lack of guidance from Congress, but that EPA finds itself actively forbidden from engaging in the kind of balancing inquiry that it must undertake to set any level above zero for non-threshold pollutants in a coherent way. No party was able to propose a test that would allow the agency to stop short of an absolute level of stringency, and yet none of the parties advocated setting the NAAQS at zero, and EPA showed "no inclination to adopt" such a strategy.³⁸

Because the agency cannot acknowledge any factor other than health in its analysis, but health alone cannot provide a complete answer to the regulatory question that it faces, it *must* engage in an unacknowledged consideration of non-statutory factors to arrive at a final outcome. There is, therefore, a necessary gap between the actual decisionmaking process and the reasons that the agency may give for its final decision. The unacknowledged consideration of a factor such as cost has obvious negative consequences for the transparency, accountability, and soundness of agency decisionmaking.

III. Inadequacy Paradox

Examining the RIAs accompanying the most recent NAAQS for lead, nitrogen oxide, sulfur dioxide, particulate matter, and ozone for each of the regulated pollutants leads to a striking conclusion, which we dub the inadequacy paradox. It turns out that, despite common conceptions, if the standards had been set according to cost-benefit analysis, they would have been more stringent in all five cases. We present below two examples: the 2008 lead standard and the recent 2015 ozone proposal.³⁹

In the regulatory impact analysis of the 2008 lead standard, the agency examined, in addition to the final standard of 0.15 $\mu\text{g}/\text{m}^3$, both a more stringent level of 0.10 $\mu\text{g}/\text{m}^3$ and a less stringent alternative of 0.40 $\mu\text{g}/\text{m}^3$. The estimates of costs and benefits varied greatly. Two factors drove this variation. First, the discount rate had a large effect on the value assigned to IQ gains from the new standard. For example, as Table 1 on the next page shows, using a 3% discount rate, the yearly benefits of the final standard were found to range between \$3,700 million and \$6,900 million; using a 7% discount rate, the benefits were

33. National Ambient Air Quality Standards for Lead, 73 Fed. Reg. 66,964, 66,997 (Nov. 12, 2008) (to be codified at 40 C.F.R. pts. 50–51, 53, 58).

34. Primary National Ambient Air Quality Standard for Sulfur Dioxide, 75 Fed. Reg. 35,520, 35,546 (June 22, 2010) (to be codified at 40 C.F.R. pts. 50, 53, 58).

35. *American Trucking Ass'ns v. EPA*, 175 F.3d 1027, 1034 (D.C. Cir. 1999), *rev'd sub nom.* *Whitman v. American Trucking Ass'ns*, 531 U.S. 457 (2001).

36. 175 F.3d at 1034–40.

37. *See Whitman v. American Trucking Ass'ns*, 531 U.S. 457 (2001) (holding that "the scope of discretion §109(b)(1) allows is in fact well within the outer limits of our nondelegation precedent").

38. 175 F.3d at 1034.

39. The full analysis for the five NAAQS with the relevant data is included in the original article.

Table 1: Cost-Benefit Analysis of the Lead 2008 Standards (Millions of 2006\$)

	Less stringent alternative: 0.4 µg/m ³		Final standard: 0.15 µg/m ³		More stringent alternative: 0.1 µg/m ³	
	3%	7%	3%	7%	3%	7%
	Discount rate	Discount rate	Discount rate	Discount rate	Discount rate	Discount rate
Range of benefits	2,100–3,700	350–1,300	3,700–6,900	650–2,600	4,800–8,600	800–3,100
Benefits midpoint	2,900	825	5,300	1,625	6,700	1,950
Range of costs	50–430	61–510	150–2,800	170–3,200	190–3,500	210–4,100
Costs midpoint	240	285	1,475	1,685	1,845	2,155
Net benefits midpoint	2,660	539	3,825	-60	4,855	-205
Midpoint of 3% and 7% net benefits	1,600		1,882		2,325	

estimated to be between \$650 million and \$2,600 million per year. The second factor was the methodology used by EPA to extrapolate the costs of emissions reductions where no existing technology was available to meet the standard. One method resulted in a relatively low estimate of between \$150 million and \$170 million for the final standard.⁴⁰ A second method, based on an average cost per microgram of air quality improvement at seven monitor areas, resulted in a substantially higher estimate of \$2,800 million to \$3,200 million.⁴¹

Analyzing the net benefits reveals the following results. For the 7% discount rate, the less stringent alternative of 0.4 µg/m³ has higher net benefits: \$539 million compared to \$(-60) million for the final standard, or \$(-205) million for the more stringent alternative of 0.1 µg/m³. In contrast, for the 3% discount rate, increasing the stringency of the standard also increases the net benefits. The net benefits of the less stringent alternative are \$2,660 million, as compared to net benefits of \$3,825 million for the final standard and \$4,855 million for the more stringent alternative.

Table 2: Cost-Benefit Analysis of Ozone 2015 Standards (Billions of 2011 \$)

	Final standard: 70 ppb		More stringent alternative: 65 ppb	
	w/o CA	CA	w/o CA	CA
Range of benefits	2.9–5.9	1.2–2.1	15–30	2.3–4.2
Benefits midpoint	4.4	1.65	22.5	3.25
Costs	1.4	0.8	16	1.5
Net benefits midpoint	3	0.85	6.5	1.75

And, likewise, when looking at the midrange of the 3% and 7% scenarios, the more stringent alternative yielding \$2,325 in net benefits dominates both the final standard and the less stringent alternative, which yield \$1,883 million and \$1,600 million in net benefits, respectively.

40. See U.S. EPA, REGULATORY IMPACT ANALYSIS FOR THE PROPOSED REVISIONS TO THE NATIONAL AMBIENT AIR QUALITY STANDARDS FOR LEAD, Table ES-2 at ES-11 (Oct. 2008); *id.* at 6-15 to 6-16 (describing cost-curve approach).

41. *Id.* at 6-18 to 6-20.

As Table 2 shows, for its recent ozone standard, the agency evaluated both its final standard of 70 ppb as well as a more stringent alternatives of 65 ppb.⁴² The agency broke out California from the rest of the nation, based on the longer expected time frame of emissions reductions in that state, which creates the potential for double counting (both costs and benefits) if California air quality improves based on other regulatory programs.⁴³ We similarly break out California, and, as the agency did, treat the state separately.⁴⁴ EPA calculates the estimated effects of the rule in 2015. Costs are discounted at 7% and in EPA's primary report benefits are discounted at the same rate. Although the agency also calculates benefits at the 3% rate (which increases the net benefits of the proposal) we likewise focus on the 7% discount rate. As with the lead standard, we take the midpoints of the range of benefits to calculate the net benefits of the final standard and the alternative.

Based on the agency's analysis, a more stringent standard would be justified. Examining the nationwide estimates, the 70ppb standard generates between \$2.9 billion and \$5.9 billion in benefits, while the 65ppb alternative increase the net benefits to the range of \$15 billion to \$30 billion. These increased benefits are not free, costing approximately \$18 billion, but nevertheless, using the midpoint of the benefits estimate, the more stringent standard delivers \$3.5 billion more in net benefits. Looking to California, the net benefits of the more stringent standard would have been roughly double the final standard.

At least for several of the NAAQS, the most straightforward explanation of the fact that the

42. The original version of this article analyzed the 2008 ozone rule because, at the time of publication, it was the most recent version. U.S. EPA, FINAL OZONE NAAQS REGULATORY IMPACT ANALYSIS, EPA-452/R-08-003, ES 4-5 (Mar. 2008) [hereinafter OZONE 2015 FINAL RIA]. The RIA for that rule found, contrary to the general trend discussed above, that the standard selected by EPA was inefficiently *stringent*. In 2015, EPA finalized an updated ozone standard that relied on new estimates of costs and benefits. In particular, new cost estimates were used that were substantially lower than in the 2008 rule. U.S. EPA, FINAL OZONE NAAQS REGULATORY IMPACT ANALYSIS, EPA-452/R-15-007 (Sept. 2015).

43. *Id.* at ES-17.

44. *Id.*

agency has adopted inefficiently weak standards is that ancillary benefits are not taken into account in the criteria documents used to establish allowable pollution levels.⁴⁵ For several of the NAAQS, there are important categories of co-benefits because reductions in one type of pollutant leads to reductions in other pollutants. For example, in the ozone NAAQS, EPA estimates that between 66 and 71 percent of the total health benefits arises from reductions in particulate matter that will come about from the rule, rather than direct ozone benefits.⁴⁶ If the ancillary effects of more stringent regulation are systematically more likely to be positive rather than negative, there would be a bias toward overly weak health-based standards, which do not account for ancillary effects, compared to cost-benefit analysis, which does.

EPA's approach seems to run counter to OMB's Circular A-4. Adopted in 2003, when John Graham was the OIRA Administrator, it requires agencies to take into account both countervailing risks and ancillary benefits in performing cost-benefit analyses that accompany "significant" regulations. But neither OMB nor any other government actor extended the logic of Circular A-4 to EPA's criteria documents, perhaps due to the common view that *American Trucking* prohibits all cost considerations when setting the NAAQS.

Uncertainty aversion provides another possible explanation for why the NAAQS are suboptimally lax. In setting the NAAQS, EPA purportedly relies only on information about the health consequences of pollution. But even though it is not allowed to explicitly consider costs that the NAAQS would impose on regulated industry, the agency nonetheless worries about imposing excessive costs. For example, in setting the NAAQS for lead in 1977, EPA acknowledged that certain types of facilities might be "severely strained both technically and economically in achieving emission reductions that may be required in implementing the proposed air quality standard."⁴⁷ In selecting the non-air contribution, it rejected a choice on the high part of the range, noting that it would produce an "exceptionally stringent standard,"⁴⁸ which presumably would be a bad thing only if it was too costly. More generally, as George Eads pointed out, the agency cannot afford to ignore the "enormous potential economic consequences" of its standards.

IV. Toward a New Approach

Health-based standards are likely to be a persistent feature of U.S. environmental law, particularly given the current congressional paralysis. But EPA does not need to continue promulgating NAAQS in a way that results in levels of protection that are less stringent than those that would result from the application of cost-benefit analysis. We argue, instead, that EPA has the discretion to use cost-benefit analysis as a regulatory floor, and that it should exercise this discretion.

At first glance, this approach might appear to be precluded by the Supreme Court's decision in *American Trucking*. This case, however, was litigated in a context in which all the parties on both sides argued that the application of cost-benefit analysis would result in less stringent standards and in which the Court accepted this characterization. No industrial group or trade association argued that cost-benefit analysis should be prohibited, and no environmental group argued it should be allowed. These groups would not have taken their respective positions had they not believed that cost-benefit analysis would lead to less stringent levels of regulation. Moreover, the Court itself assumed that the consideration of costs would lead to less stringent standards. Justice Scalia's majority opinion notes that the "cost of implementation . . . is so full of potential for canceling the conclusions drawn from direct health effects that it would surely have been expressly mentioned in §§ 108 and 109 had Congress meant it to be considered."⁴⁹

As a result of the way in which the arguments were presented to the Court and the way in which the Court dealt with these arguments, the holding of *American Trucking* should be characterized as precluding the consideration of costs only in instances when doing so would lead to less stringent standards than the ones determined solely through reliance on public health considerations. The holding should not be extended to the opposite situation, which is the focus of this Article, in which the consideration of costs would lead to more stringent standards. With respect to this situation, the statute should be characterized as being silent. Typically, in the case of statutory silence, an agency's interpretation of the statute that Congress has empowered it to administer is entitled to Chevron deference.⁵⁰

Under Executive Order 12,866, administrative agencies are required to justify regulatory decisions through the application of cost-benefit analysis except where such consideration is "prohibited by law."⁵¹ Under the interpretation of *American Trucking* that this Article advocates, EPA would be required to first determine, as currently, what NAAQS is appropriate on the basis of public health considerations alone. Next it would look at the cost-bene-

45. See, e.g., U.S. EPA, AIR QUALITY CRITERIA FOR PARTICULATE MATTER (FINAL REPORT), EPA 600/P-99/002aF-bF (Oct. 2004); U.S. EPA, INTEGRATED SCIENCE ASSESSMENT FOR OXIDES OF NITROGEN—HEALTH CRITERIA (FINAL REPORT), EPA/600/R-08/071 (July 2008). Even when EPA considers possible interactions among pollutants, it does not evaluate the ancillary benefits. See U.S. EPA, INTEGRATED SCIENCE ASSESSMENT (ISA) FOR SULFUR OXIDES—HEALTH CRITERIA (FINAL REPORT), EPA/600/R-08/047F at 3-8, 3-9, 3-28 (Sept. 2008).

46. OZONE 2015 FINAL RIA, *supra* note 42, at E-14.

47. Lead 1977 Proposed Rule, *supra* note 23, 63,082.

48. Lead 1978 Final Rule, *supra* note 25, at 46,254.

49. *Whitman v. American Trucking Ass'n, Inc.*, 531 U.S. 457, 469 (2001).

50. See *Chevron, U.S.A., Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837, 842-44 (1984); Thomas W. Merrill & Kristin E. Hickman, *Chevron's Domain*, 89 GEO L.J. 833, 833 (2001).

51. Exec. Order No. 12,866, 58 Fed. Reg. 51,753 (1993) (Clinton Administration).

fit analysis, which is already prepared in the RIAs during the regulatory proceedings.⁵² It would then pick the more stringent of the standards justified by health-based inquiry and cost-benefit analysis, respectively. In the former case, EPA would not modify its health-based approach, pursuant to the *American Trucking* holding. But in the latter case, it would be required by the Executive Order to make the standard more stringent. This approach would likely lead to more stringent NAAQS for all pollutants currently regulated under the program.

V. Conclusion

In this Article, we have shown that the centerpiece of the Clean Air Act—the National Ambient Air Quality Standard program—exhibits two serious pathologies. The first is the stopping point problem. In setting such standards, EPA cannot provide a coherent explanation for why it did not pick a more stringent alternative, given that public health considerations are the only legally cognizable factors that it can take into account under the current interpretation of the law. This problem, which is most clear in

the case of non-threshold pollutants, manifests itself for threshold pollutants as well.

Moreover, a widely held assumption that we debunk in this Article had been that health-based standards like the NAAQS would lead to more stringent standards than would the application of cost-benefit analysis. We show that, for the NAAQS, the reality has generally been the opposite, giving rise to the inadequacy paradox.

The universally accepted consensus is that the Supreme Court's decision in *American Trucking* stands in the way of a solution, even a partial solution, to these problems by precluding the consideration of costs in setting the NAAQS. We argue, in contrast, that a proper understanding of this decision would permit the use of cost-benefit analysis when it would lead to more stringent standards than those derived from health-based considerations alone. This one-way ratchet solves the inadequacy paradox. As a result, the NAAQS would never be less stringent than the welfare maximizing standards. In addition, because cost-benefit analysis would be the operative standard for many (if not all) of the NAAQS, the scope of the stopping point problem would be greatly reduced, even if it remained a background conceptual concern.

52. See *supra* note 4.

C O M M E N T

Rethinking Rethinking Health-Based Environmental Standards and Cost-Benefit Analysis: A Solution in Search of a Problem?

by Gary S. Guzy

Gary S. Guzy is Senior Of Counsel, Covington & Burling LLP, Washington, DC.

Professors Livermore and Revesz present a seemingly well-documented call for moving beyond health-based environmental standards to optimize public health and environmental protections in their provocative article. Yet I do not believe that their assessment: (1) adequately reflects the degree to which existing health-based standard setting has worked well in delivering key public health and environmental protections under the Clean Air Act; (2) supports their conclusion that the current system is somehow based on secret considerations that allow costs to become “a dark and ominous presence that silently influences the proceedings”¹ and thereby skews and weakens the results; or (3) sufficiently confronts the challenges that would occur from supplanting health-based standard setting in favor of cost-benefit considerations in instances where those might lead to more stringent standards. The proposal, in particular, does not consider how the creation of new categories of judicial review may impede the very results they seek and the degree to which it would undermine the Environmental Protection Agency’s credibility in the courts.

The authors’ proposal seeks to upend one of the most significant environmental court rulings of the modern environmental era, *American Trucking Ass’n v. Whitman*, 531 U.S. 457 (2001). In a unanimous decision authored by Justice Antonin Scalia, the Supreme Court agreed with the Environmental Protection Agency (EPA) that—in determining how clean the air must be to be safe to breathe—those air quality standards should be set, under section 109 of the Clean Air Act, based purely on the scientific evidence of the public health effects of pollutants, without regard to the costs of implementing necessary pollution controls. The Court also reversed the U.S. Court of Appeals for the District of Columbia Circuit and agreed with EPA that it was not unconstitutional for Congress to have delegated

to an expert administrative agency the necessarily complicated and lengthy task of setting those standards.

I. Health-Based Clean Air Standards Function Well and Serve Important Ends

One of the fundamental changes wrought by the Clean Air Act in 1970 was to supplant disparate state standards with a minimum level of national protection that would be based upon public health considerations. This assurance of a basic national right was more than a mere convenience or tool—it was woven into the fabric of the justification for that transformation.

Moreover, the Clean Air Act’s basic approach—to set protective public health standards based on the best available science, to review this science at regular intervals, to force the development of new pollution control technologies to meet tighter standards, and to allow flexibility to find the most cost-effective reductions—has been proven right time and time again. It has allowed for significant protections in a way that has proven to be compatible with continued economic growth.²

This approach has enjoyed bipartisan support from the start. It recognizes that EPA will never have the answer to every possible scientific question, even when there is more than enough information to compel action. Legislators recognized, with this structure, that the science of air pollution would evolve, but they also knew that it was essential to get on with providing protections to the American public and that it would be natural for standards to evolve

1. Michael A. Livermore & Richard L. Revesz, *Rethinking Health-Based Environmental Standards*, 89 N.Y.U. L. Rev. 1184, 1253 (2014).

2. See, e.g., *The Benefits and Costs of the Clean Air Act, 1970 to 1990* (U.S. Environmental Protection Agency, Oct. 1997), <https://www.epa.gov/sites/production/files/2015-06/documents/contsetc.pdf>; *The Benefits and Costs of the Clean Air Act From 1990 to 2020, Final Report—Rev. A* (U.S. Environmental Protection Agency, Apr. 2011), https://www.epa.gov/sites/production/files/2015-07/documents/fullreport_rev_a.pdf.

over time. That is why Congress required a thorough periodic scientific review of the National Ambient Air Quality Standards (NAAQS) to assess their adequacy. Congress has long recognized that even for the most fundamental air pollutants, EPA might not have all of the answers, but this should not prevent regulatory action. The approach then channels the consideration of costs into devising the most effective strategies to meet pollution standards.

Nor should one underestimate the importance of public support—including by regulated industry—for reasonable, settled expectations. One cannot assume that the level of bipartisan support for the Clean Air Act that existed at the time of its enactment—or even the level of understanding of the rationale for how the Act came to be and why it continues to be needed—continues today. Yet it is hard to argue against settled expectations. I remember vividly during the oral argument in *American Trucking*, when counsel for industry petitioners there contended, “I don’t frankly know how in a world of limited resources, whether it’s air pollution or managed care, how we can make these decisions if we don’t think about what risks are acceptable [by considering costs].” To which then Chief Justice William Rehnquist replied, “But you say you don’t know how we can live with this kind of a regime. Well, we have lived with it for 20 years.”³

Concededly, it may be more difficult to justify a pure health-based approach the more mature the environmental laws become and the more success our society has in tackling the low-hanging environmental fruit, as we seem to be chasing fewer public health and environmental gains at greater incremental expense. That line of argument seemed to have motivated the *American Trucking* industry petitioners in their Supreme Court challenge to the more stringent ozone standards there at issue. The petitioners had staked their hopes of persuading a divided court on an appeal to Justice Breyer’s concerns about the allegedly unjustifiable resource allocation choices made in the environmental risk reduction approaches of some environmental statutes, such as Superfund. Indeed, the litigants sprinkled their briefs liberally with references to Justice Breyer’s essay, *Breaking the Vicious Circle: Toward Effective Risk Regulation* (Harvard Univ. Press 1995), in which he questions the wisdom of going after the last increment of every pollutant at increasingly exorbitant costs. Yet—despite this effort—Justice Breyer’s Concurring Opinion in *American Trucking* instead provides a ringing endorsement of the Clean Air Act, including a recognition of the centrality of its technology-forcing approach and the effect of that approach on cost-benefit considerations.

Justice Breyer pointed in his concurrence to circumstances during the enactment of the Clean Air Act in 1970, when many in the automobile industry contended that a Congressionally mandated tailpipe emissions reduction of ninety percent would lead to economic catastrophe. He stated, “Indeed, this Court, after reviewing the entire leg-

islative history, concluded that the 1970 amendments were expressly designed to force regulated sources to develop pollution control devices that might at the time appear to be economically or technologically infeasible.”⁴ Justice Breyer observed that, instead, technology-forcing hopes had proved “realistic.” He went on to note: “The [Clean Air Act’s] technology-forcing objective makes regulatory efforts to determine the costs of implementation both less important and more difficult. *It means that the relevant economic costs are speculative, for they include the cost of unknown future technologies. It also means that efforts to take costs into account can breed time-consuming and potentially unresolvable arguments about the accuracy and significance of cost estimates. Congress could have thought such efforts not worth the delays and uncertainties that would accompany them.* In any event, that is what the statute’s history seems to say.”⁵

Professors Livermore and Revesz seem to disregard the difficult analytical task they propose to substitute for the current approach to standard setting. Nor do they consider the degree to which judicial review of cost-benefit considerations could further complicate and delay standard setting and impede accomplishing the goal of establishing more rigorous standards—raising the very issues around the accuracy and significance of cost (and benefits) estimates about which Justice Breyer—as well as the Congress that enacted the Clean Air Act—were deeply concerned.⁶

Moreover, while acknowledging other reasons for avoiding imposing a strict cost-benefit decisional test, I do not believe the authors give these important factors sufficient consideration. One should not underestimate: the difficulty of quantifying benefits like a lost school day or decreased IQ points for a child; the distributional concerns about the public bearing the cost from involuntarily breathing the air polluted by private firms that do not properly internalize those costs; and the fact that at times government may act for simple moral reasons, such as the disproportionate effects of an activity on children, as has been demonstrated by recent public outrage over the lead-contaminated water challenges in Flint, Michigan.

II. Is There a Problem in Need of Fixing?

Is it nonetheless worth overcoming these concerns because of the limitations wrought by the current system of health-based standard setting? I do not see some pernicious influence that would justify this step. First, I see little sustainable

3. Transcript of Oral Argument at 20, *Am. Trucking Ass’n v. Browner*, 530 U.S. 1202 (2000).

4. *Whitman v. Am. Trucking Ass’n*, 531 U.S. 457, 491, 31 ELR 20512 (2001) (Breyer, J. concurring) (citing *Union Elec. Co. v. EPA*, 427 U.S. 246, 257 (1976)).

5. *Id.* at 493 (emphasis added).

6. The current years-long continuing litigation over the role of costs and benefits in EPA’s classification of power plants as necessary and appropriate for listing to develop hazardous air pollutant standards for mercury and other pollutants under Clean Air Act section 112(n) may provide a cautionary tale of the delay that can result. *See, e.g.*, Memorandum for the Federal Respondent In Opposition to Application for Immediate Stay of Final Agency Action (No. 15A886) (U.S. Supreme Court), [http://assets.law360news.com/0765000/765019/mats%20stay%20opposition%20&%20appendix%20-%20final%20\(1\).pdf](http://assets.law360news.com/0765000/765019/mats%20stay%20opposition%20&%20appendix%20-%20final%20(1).pdf).

evidence that costs are “a dark and ominous presence that silently influences the proceedings.”⁷ There is nothing secret about the way in which costs and benefits are currently addressed in the NAAQS process, as the authors imply. Indeed, in looking at recent examples that the authors examine—such as that involving particulate matter—EPA published a thorough draft Regulatory Impact Assessment (RIA) as part of the proposed rule’s publication assessing costs and benefits and then prepared a detailed Final RIA, nearing 500 pages in length, for publication with the final rule.⁸ EPA even included a description of these evaluations in its Fact Sheet summarizing its actions.⁹ EPA has at times provided robust guidance on how states should write their State Implementation Plans in implementing NAAQS, how it would contemplate designing Federal Implementation Plans, and Presidential Memoranda instructing the EPA on flexibilities it should consider to manage costs on states and industry during implementation.

The authors also argue that, for pollutants, such as ozone, which do not exhibit any threshold level of effects, all health risks can be completely eliminated only by banning all emissions. The authors refer to this as the problem of the “stopping point.” They contend that it is an “incoherent task” for EPA to determine an acceptable goal other than zero risk if there is no reference other than health. But the authors ascribe to EPA a goal that Congress did not. All the Clean Air Act requires, and what EPA undertakes to accomplish with its health-based standard setting, is to set a NAAQS at whatever level is “requisite to protect public health,” “allowing an adequate margin of safety,” including considering the effects on sensitive sub-populations.¹⁰ Even if EPA is unable to identify a threshold, it still may determine where the weight of the evidence supports such a finding. In doing so, EPA is relying on the scientific record before it and is not giving a wink and a nod to the economics, despite the belief of the authors that this must be so.

The authors arguments seem perilously close to succumbing to the second issue that was before the Supreme Court in *American Trucking*. The Court of Appeals had held that Clean Air Act section 109, as interpreted by EPA, did not provide an “intelligible principle” to guide the EPA’s exercise of authority in setting NAAQS. “[The] EPA,” it said, “lack[ed] any determinate criteria for drawing lines. It has failed to state intelligibly how much is too much” and thereby violated the nondelegation doctrine by ascribing legislative power to the agency in violation of Article I, §1, of the Constitution.¹¹ The Supreme Court disagreed. It found that §109 “does not require the EPA to eliminate every health risk, however slight, at any eco-

nomie cost, however great The statute, by its express terms, does not compel the elimination of all risk” (J. Breyer, concurring). Rather, there are a range of factors, aside from cost, that EPA is to consider in determining the level of a standard that is requisite to protect public health. As Justice Breyer explained, “The statute’s words, then, authorize the Administrator to consider the severity of a pollutant’s potential adverse health effects, the number of those likely to be affected, the distribution of the adverse effects, and the uncertainties surrounding each estimate.”¹² This is precisely what EPA has done in setting NAAQS.

EPA’s controversial 2008 ozone standard, which was set outside of the Clean Air Scientific Advisory Committee (CASAC) range at 0.75 ppm, provides an example of how the current approach can work, even under the most challenging conditions. EPA explained, and the reviewing court upheld EPA’s contention, that there was scientific uncertainty about effects at lower levels in setting the primary NAAQS.¹³ The level at which there were reliable health effects demonstrated provides a basis for setting the standard at a level other than zero, even without a threshold effect. And it is not surprising that sufficient health studies may not have been conducted that could reliably demonstrate effects at a lower level, for EPA is understood to conduct another review in five years precisely so it could take into account any new scientific developments.

Likewise, the authors seek to bolster their argument by professing shock that no ambient level for a NAAQS can be assured of being protective in all locations.¹⁴ But this construction ignores the purely national nature of a NAAQS. Similarly, the authors’ skepticism about the adoption of averaging periods ignores the substantial justifications that EPA provides for the form of the standard containing hourly and longer-term requisite levels.

III. The Proposed Solution Raises Significant Risks of Its Own That Should Not Be Ignored

Setting aside any concerns with the justification for any change in the standard, is there a way to accomplish the authors’ objective to enhance protections? They muster a plausible argument for agency discretion that perhaps may work to limit the construction and holding of *American Trucking* strictly to instances where cost-benefit considerations would lead to relaxation of a standard. Yet is this approach remotely sustainable? Perhaps my initial negative reaction is unduly informed by the context in which *American Trucking*’s holding affirming public health-based standard setting without the consideration of costs and benefits arose. The ruling itself seemed so monumental for those who worked on it, in part, because it was the culmination of a long and contentious battle to modernize the NAAQS, including adding first-time ever fine par-

7. Livermore & Revesz, *supra* note 1, at 1253.

8. U.S. EPA, Regulatory Impact Analysis of the Proposed Revisions to the National Ambient Air Quality Standards for Ground-Level Ozone (2014), <https://www3.epa.gov/ttn/ecas/regdata/RIAs/20141125ria.pdf>.

9. U.S. EPA, Overview of EPA’s Proposal to Revise the Air Quality Standards for Particle Pollution (Particulate Matter), <https://www3.epa.gov/pm/pdfs/PMNAAQSProposalOVERVIEW61512UPDATED.pdf>.

10. Clean Air Act § 109(b)(1), 42 U.S.C. § 7409(b)(1).

11. *Am. Trucking Associations, Inc. v. E.P.A.*, 175 F.3d 1027, 1034 (D.C. Cir. 1999).

12. *Id.*

13. *Mississippi v. EPA*, 723 F.3d 246, 43 ELR 20158 (D.C. Cir. 2013).

14. Livermore & Revesz, *supra* note 1, at 1208.

ticle protections and tightening ozone limits to protect children's health. It arose in the context of controversial regulatory reform legislative proposals that would have effectively amended many environmental rules by imposing cost-benefit "super-mandates" on the agency and allowing extensive judicial review of detailed agency process and findings.¹⁵ Moreover, *American Trucking's* effort to inject cost considerations into the most basic Clean Air Act standards also arose in the context of the fundamental nondelegation challenge described above. The momentous sense of these proceedings was perhaps heightened by the fact that oral argument took place right on Election Day in 2000 during the contentious race between George W. Bush and Al Gore.

But aside from the atmospherics of seeming to renege on a fundamental victory ratifying EPA's views before the Supreme Court, one must look carefully at the price that such a change would exact. It is hard to imagine what argument EPA would make to justify exercising discretion to consider costs in such an outcome determinative fashion—only where it would lead to more stringent results. Without a clear basis in the statutory language for doing so, which the authors concede and the Supreme Court has found to be absent, EPA would need to explain what would have been the Congressional purpose in only considering costs when they lead to more stringent results. One can imagine the resurrection of what has become one of Justice

Scalia's most famous quotations, from his opinion in *American Trucking* itself, that, "Congress . . . does not alter the fundamental details of a regulatory scheme in vague terms or ancillary provisions—it does not, one might say, hide elephants in mouseholes."¹⁶ Unlikely that Congress would hide this elephant in this mouse hole.

EPA must work hard to overcome the natural skepticism that courts take to its endeavor, particularly given the broad impact of its actions to address market failures created by pollution. This requires constant vigilance to ensure that EPA builds its credibility in the courts with arguments that are well grounded in the law and the record before the agency. While there certainly are policy arguments that might support at times going beyond a health-based floor, those seem like arguments better suited to be made to Congress than to the courts. Understandably, this is not an attractive proposition, as it seems unlikely that a highly divided Congress would rally around such a change. But the consequence of instead attempting to shoehorn selective health-plus standards into this already carefully interpreted and highly bounded statutory provision would be to risk again having courts equate EPA's logic with that of Lewis Carroll's Queen of Hearts, where EPA substitutes its desires for the plain language of the Clean Air Act.¹⁷ This could undermine EPA's credibility not only in this instance, but far more broadly as well.

15. See generally Jonathan Z. Cannon, *EPA and Congress (1994-2000): Who's Been Yanking Whose Chain?*, 31 ELR 10942 (Aug. 2001).

16. *Whitman v. American Trucking Ass'n*s, 531 U.S. at 468 (emphasis added).

17. *New Jersey v. EPA*, 517 F.3d 574, 582, 38 ELR 20046 (D.C. Cir. 2008) (overturning EPA's effort to substitute general new source performance standards under Clean Air Act section 111 for authority provided by the specific provisions regarding electric power plant hazardous air pollutant emissions under section 112).

C O M M E N T

What Appears Obvious Is Not Necessarily So

by Sally Katzen

Sally Katzen is a Professor of Practice and Distinguished Scholar in Residence at New York University School of Law and a Senior Advisor at the Podesta Group in Washington. I am grateful to Penny King for her assistance.

This extraordinarily well-written, well-researched article by Michael Livermore and Ricky Revesz (“the authors”) makes a significant contribution to the literature and public policy debates by challenging conventional wisdom—namely, that health-based National Ambient Air Quality Standards (NAAQS) are more stringent (and hence more protective) than those that would be set were we to consider the costs of achieving those standards.¹ The authors carefully, and to my mind convincingly, debunk the idea that health-based standards are necessarily more protective than those that might be based on cost/benefit analysis (CBA) or other economic considerations, providing facts rather than unsubstantiated rhetoric. This information is new and it is dramatic.

While I believe there is much here that will fuel constructive consideration of a critical issue, I have two concerns: aspects of their characterization of how health-based standards are set; and their reading/analysis of the relevant Supreme Court precedent.

With respect to the first, the authors describe a “stopping point problem,” which arises because, they say, there is no coherent, defensible way for EPA to set the permissible level of a pollutant based on health considerations alone. This conclusion is based on their premise that, especially for a non-threshold pollutant (where by definition anything above zero will have some adverse biological effect), faithful implementation of a health-based standard would mean that everyone that can be protected should be protected; and that agency invocation of “public health policy judgments” as the basis for its decision for a stopping point short of universal protection is essentially disingenuous (if not duplicitous).² Rather than making “public

health policy judgments,” they believe the agency is in reality “considering costs surreptitiously . . . [with] negative consequences for the transparency, accountability, and soundness of agency decision-making.”³ By following this trail, it is understandable that they would then condemn such “obstruction of reason.”⁴

But I see (and have seen) the decisionmaking process differently. Public health policy judgments are not limited to those reached in a laboratory setting. That is why the phrase includes the terms “policy” and “judgment.” There may be more art than science, or, more specifically, more sense than specificity, to the decisionmaking, but the fact that the decision is often more difficult to document than CBA (although there are aspects of CBA that can hardly be called precise) does not make it any less valid. In our own lives, we often make decisions (including drawing seemingly arbitrary lines) that are informed by science but may ultimately be based on alternative criteria—consider, for example, how you decide how much contact to have with a family member with a suspected contagious disease. In the same vein, medical doctors often opine about alternative treatments for a disease; in some cases, they may be influenced by costs, but many times costs are not a factor and there is still extensive deliberation because of the consistency or volatility of the data, the efficacy over time of different courses of action and/or the potential risks of those choices. Not surprisingly, therefore, public policy decisionmakers routinely draw lines (wholly apart from cost considerations) regarding health issues, from the nature of warnings (but not bans) on certain products (consider cigarettes and peanuts) to requiring protective equipment or approving drugs as safe and effective even though adhering to the specified standards will leave some particularly vulnerable individuals at, possibly very serious, risk.⁵

1. Michael A. Livermore & Richard L. Revesz, *Rethinking Health-Based Environmental Standards*, 89 N.Y.U. L. REV. 1184 (2014).

2. *See id.* at 1188 (“The result is, most likely, an elaborate obfuscation of the true reasoning underlying the agency’s decision, undermining core values of the administrative state.”). Indeed, the authors apparently dismiss the legitimacy of making “public health policy judgments” for the purposes of standard setting. *See, e.g., id.* at 1200 (“These decisions require the agency to . . . decid[e] which negative health consequences will be deemed tolerable and what level of certainty concerning the link between exposure and health is sufficient to justify imposing controls . . . [, as well as] . . . determin[ing] the percentage of the population to protect, which often translates into a

question of how many people who are particularly susceptible to the negative consequences of the pollutant . . . to leave unprotected. To the extent that there are correct answers to such questions, *they sound in morality or politics, not science.*” (Emphasis added.)).

3. *Id.* at 1189.

4. *Id.*

5. Each of these examples is governed by its own applicable statute, which incorporate a multitude of different standards. While therefore none is on point, together they tell a story that I believe is worth telling.

With respect to the NAAQS process at EPA, there are science-based bounds to any determination. At one end of the spectrum is background; EPA cannot set standards below background levels (even if sensitive populations may suffer adverse health effects at background),⁶ and background levels for some pollutants may vary (significantly) across the country, which is relevant because EPA must set a nation-wide standard that is the same across the nation. At the other end of the spectrum is where even minimal exposure would likely cause severe and irreversible harm (even death) to those affected. Between these two are numerous levels, where adverse health effects range from low to high for different segments of the population, depending on a number of factors (or confounders) in addition to exposure (which is not always susceptible to precise measurement). This is where judgment (informed by all the information that science can contribute) operates to determine whether to protect some, most or virtually all of the population. Also, importantly, this judgment is not exercised in a vacuum, but rather incorporates a number of factors (to which the authors do not apparently give much weight), such as the degree of uncertainty in the science (which in some cases can be quite significant)⁷ or the ease of implementing the selected standard.⁸

The authors take a different (less complicated) path. For them, if the test is “public health,” then there is no room for the exercise of judgment:

“Of course, if only public health considerations were relevant, less risk would always be better. And without considering the non-health consequences of a rule, such as compliance costs, there can be no justification for any decision to allow *any risk at all*.”⁹

This sounds like a call for the application of the precautionary principle, which has never been read into the Clean Air Act and is not the norm in regulatory policymaking in this country. Rather, in much, if not most, of our regulatory sphere, decisionmakers frequently face the question: how much risk is acceptable? That is the essence of a public health policy debate, and the answer is what I understand to be a public health policy judgment. It has substance and is not simply a guise for secretly considering costs.

My view on this is admittedly biased (or informed) by my own experience in policy deliberations, including specifically the debates concerning the setting of the NAAQS for ozone and fine particulate matter in 1997.¹⁰ The authors assert that we must have considered costs.¹¹ They are partially correct, for we did consider costs *for the implementation phase*.¹² But costs were not a consideration when we took the first step analytically in the rulemaking proceeding—namely, the *setting of the standard*. Later, when it came time to determine how much time to allow regulated entities to come into compliance with the specified standard, we took into account the costs of compliance as well as the state of the technology. The authors recognize that the Clean Air Act is a technology-forcing act¹³—it sets the standards where health considerations dictate and hope (or expect) that American ingenuity will develop more sophisticated, less costly ways of meeting that standard. But technological developments do not happen overnight—even with strong incentives at work—and it is therefore important to set an attainable (even one that assumes a huge stretch) schedule for meeting that standard.

In any event, my recollection is that the many discussions that we had in 1997 during review of the final standards for ozone and fine particulate matter were bifurcated—what does the science say about the appropriate level and then, and only then, what is realistic about an implementation schedule. I stress this point because, while I understand the authors’ skepticism,¹⁴ they appear to move through the article from possibility to certainty that the actual basis for decisionmaking in standard setting proceedings is the consideration of costs.¹⁵ I respectfully disagree, based on my admittedly limited experience.

My second point relates to *Whitman v. American Trucking*¹⁶ and whether it is a bar to the use of CBA in standard setting if the use is confined to setting a level for the pollutant that is *more* protective than that which would result

6. I use “adverse health effects” rather than “nonharmful biological responses.” Livermore & Revesz, *supra* note 1, at 1210, because the Clean Air Act is cast in terms of health effects, and I subscribe to the view that health effects means effects on health, not a nonharmful biological response.

7. In the 2015 revised National Ambient Air Quality Standards for Ozone, the Administrator acknowledged scientific uncertainties during the 1997 review: “A more restrictive form was not selected, recognizing that the differences in the degree of protection afforded by the alternatives were not well enough understood to use any such differences as a basis for choosing the most restrictive forms (62 FR 38856).” National Ambient Air Quality Standards for Ozone, 80 Fed. Reg. 65,292, 65,350 (Oct. 26, 2015) (to be codified at 40 C.F.R. pts. 50–53, 58).

8. The Administrator explained that her choice among the alternatives for the 2015 revised National Ambient Air Quality Standards for Ozone was the one that would provide “an appropriate balance between public health protection and a stable target for implementing programs to improve air quality.” *Id.* at 65,352.

9. Livermore & Revesz, *supra* note 1, at 1213 (emphasis added).

10. At the time, I was the Administrator of the Office of Information and Regulatory Affairs at the Office of Management and Budget, which has responsibility for reviewing draft proposed and final regulations from Executive Branch agencies under Executive Order 12,866, 3 C.F.R. § 638, 24 ELR 45070 (1993).

11. Livermore & Revesz, *supra* note 1, at 1189.

12. See, e.g., *Whitman v. Am. Trucking Ass’ns*, 531 U.S. 457, 493, 31 ELR 20512 (2001) (Breyer, J., concurring) (“[T]he Act does not, on this reading, wholly ignore cost and feasibility. As the majority points out . . . the Act allows regulators to take those concerns into account when they determine how to implement ambient air quality standards.”).

13. See Livermore & Revesz, *supra* note 1, at 1195.

14. The authors cite several former executive branch officials, including George Eads, C. Boyden Gray, and Brian Mannix, who have voiced similar views, but, to my knowledge, the authors are the first who have declared, with a certain definitiveness, that this is actually what happens. *Id.* at 1232–33.

15. E.g., *id.* at 1231–32 (“Because the agency cannot acknowledge any factor other than health in its analysis, yet health alone cannot provide a complete answer to the regulatory question that it faces, it *must* engage in an unacknowledged consideration of nonstatutory factors to arrive at a final outcome.”); *id.* at 1234 (“EPA’s inability to divulge the *genuine reasons* behind its chosen standard . . .”) (emphasis added); *id.* at 1235 (“[T]he statutory standard prevents the agency from disclosing the criteria it used to actually arrive at its decision.”); *id.* at 1254 (“[Commenters] do not have the opportunity to specifically refute the *actual* basis for the agency’s decision.” (Emphasis added.)).

16. 531 U.S. 457 (2001).

from using a health-based standard—in other words, the authors’ suggestion that CBA can be used as a one-way ratchet, to tighten but not to loosen a standard.¹⁷ I believe in CBA and am convinced that it is a valuable (though not dispositive) factor in decisionmaking. However, to say that *American Trucking* can be “reinterpreted” (or that its holding barring the use of costs can be viewed as dicta) to allow consideration of costs for this purpose (namely, the setting of a more stringent standard) is not only a heavy lift, but also a true testament to the authors’ ingenuity.¹⁸

My (admittedly unimaginative) reading of the decision is that EPA cannot consider costs in the setting of the NAAQS under the terms of the Clean Air Act. None of the Justices who wrote opinions (and there are four separate opinions)¹⁹ even hints that, given the statutory language, costs can be considered in setting the standard. This includes Justice Breyer who is a consistently strong supporter of CBA as a tool in decisionmaking. The authors may well be correct that the Justices assumed that use of CBA would yield a standard that would be less protective than one derived solely on health considerations.²⁰ Based on the data and analysis assembled by the authors, that assumption was clearly unwarranted. That happens. Similarly, it is likely that in enacting (and amending) the Clean Air Act, Congress assumed that health-based standards

would be more protective than those incorporating economic considerations.²¹ Indeed, as the authors document, it has been the long-standing view of both environmentalists and industry “that health-based standards will lead to more stringent environmental standards.”²² Thus, Congress probably wrote (and rewrote) the statute based on a mistaken impression. Again, that happens.

The solution is for Congress to correct its mistake. If Congress continues to want EPA to set the most protective standards and can be convinced that CBA can, at least in some instances, militate in favor of a more protective standard than one based solely on health considerations, it should amend the Clean Air Act. I recognize this course is extraordinarily unlikely with the current paralysis on Capitol Hill. But it is not for the courts to rewrite a statute or read into it something so at odds with what Congress thought it was doing, and what it did (albeit mistakenly).²³ This would not only be beyond the ken of any textualist, but also a huge stretch for even a devout purposivist.

With the energy and enthusiasm the authors bring to this subject, along with the incredible array of data and analysis they have assembled, they may persist and prevail. It is a worthy effort and, at the very least, the work they have done will shake (if not shatter) our conventional wisdom—which is always a good thing.

17. See *id.* at 1262-63 (“The consideration of costs in the face of congressional silence should be prohibited only in cases in which it would lead to compromising the stringency of the health-based standards, which was the situation the Court focused on in *American Trucking*, not where it would lead to strengthening them.”).

18. See Livermore & Revesz, *supra* note 1, at 1258-59.

19. Justice Scalia wrote the Majority opinion for a unanimous court, and Justices Thomas, Stevens, and Breyer wrote concurring opinions. See *id.* at 462 (Justice Scalia’s opinion); *id.* at 486 (Justice Thomas’ opinion); *id.* at 487 (Justice Stevens’ opinion); *id.* at 490 (Justice Breyer’s opinion).

20. The quotes that the authors selected reveal the Justices’ assumption that consideration of costs would lead to less protective standards, see Livermore & Revesz, *supra* note 1, at 1261-62, but that does not establish the obverse—that is, that the Justices would have accepted the consideration of costs if doing so would lead to more protective standards. Thus, I do not subscribe to the authors’ view that the Act is “silent” on the use of costs to make the standard more protective and that, therefore, *Chevron* deference would enable EPA to reinterpret the Act to allow consideration of costs to such an end. *Id.* at 1262-63.

21. The Clean Air Act of 1970 called on the Administrator to consider specifically what is requisite for the protection of public health. Clean Air Amendments of 1970, Pub. L. No. 91-604, § 109(b)(1), 84 Stat. 1676, 1680 (1970) (“National primary ambient air quality standards . . . shall be . . . based on such criteria and allowing an adequate margin of safety, [as] are requisite to protect the public health.”). In spite of major amendments in 1990, this language remains in the statute. See 42 U.S.C. § 7409(b)(1) (“National primary ambient air quality standards . . . shall be ambient air quality standards the attainment and maintenance of which, . . . based on such criteria and allowing an adequate margin of safety, are requisite to protect the public health.”).

22. Livermore & Revesz, *supra* note 1, at 1236, 1259-61.

23. See *United States v. Locke*, 471 U.S. 84, 95, 30 ELR 20438 (1985) (“But the fact that Congress might have acted with greater clarity or foresight does not give courts a *carte blanche* to redraft statutes in an effort to achieve that which Congress is perceived to have failed to do.”).

ARTICLE

Non-Transmission Alternatives

by Shelley Welton

Shelley Welton is a Ph.D. Candidate in Law, Yale Law School.

I. Introduction

The United States is approaching an electricity-transmission crisis at the same time that transmission has become the critical “fulcrum” on which the future of the U.S. energy mix may pivot.¹ If the United States is to meet ambitious federal and state goals for transitioning its electricity system to one that relies far more on renewable power, and far less on fossil fuels, expanding transmission is critical.

Yet transmission faces many well-documented challenges, including siting battles and complicated questions about how to allocate the costs of new lines.² It also creates significant environmental impacts, which often lead to protracted litigation over the adequacy of environmental analyses.³ Often it is easier, cheaper, and environmentally preferable to eliminate or shift demand, or to locate generation strategically, than it is to build new lines. As demand-reduction and demand-shifting strategies gain in scale and sophistication, they will prove increasingly viable alternatives to building new transmission. Not only might these strategies often prove cheaper, they might also bring environmental benefits in the form of reduced carbon emissions, reduced conventional pollutants, and avoided environmental degradation from not building new transmission lines.

However, there are persistent governance and jurisdictional hurdles that impede the United States’ ability to deploy these “non-transmission alternatives.” Transmission development occurs through a complex web of federal and state processes and approvals.⁴ States have taken some steps

to evaluate alternatives to local transmission solutions, but transmission planning is increasingly an interstate, regional issue, carried out by bodies beyond state control.⁵ These regional transmission planning processes fail to properly consider or promote non-transmission alternatives.

This failure has major ramifications. Much expensive new transmission will inarguably be necessary in the coming decades. The ability to understand when *not* to build transmission because other solutions out-perform it will be an important, complementary part of accomplishing U.S. energy goals.

The Federal Energy Regulatory Commission (“FERC”) has recognized that non-transmission alternatives deserve greater attention during transmission planning and has taken steps to better promote their consideration. FERC’s 2007 “Order 890” and 2011 “Order 1000” mandated comparable consideration for non-transmission alternatives, but left the details of achieving comparability to be worked out at the regional and local levels. Unfortunately, planners at these levels are doing no more than making vague promises to “comparably consider” non-transmission alternatives proposed by participating stakeholders.

This Article argues that such process-focused, participatory reforms are unlikely to do much to alleviate the challenges non-transmission alternatives face. It identifies three impediments that will prevent FERC’s participatory governance reforms from facilitating comparable consideration in practice. First, the United States has ceded the function of transmission planning to private, transmission-focused entities, creating institutional biases and expertise in favor of building actual transmission. Second, non-transmission alternatives have societal benefits that are not considered, and likely cannot be fully considered, in FERC-led transmission planning processes. Third, non-transmission alternatives are ineligible to have their costs allocated among regional beneficiaries—a privilege that FERC accords to approved transmission projects.

FERC’s heavy reliance on participatory reforms to promote non-transmission alternatives pays lip service to these alternatives without meaningfully changing planning processes. Such a lack of fit between rhetoric and action is troubling. FERC declares that it has created a process for

The full version of this Article was originally published as: Shelley Welton, Non-Transmission Alternatives, 39 HARV. ENVTL. L. REV. 457 (2015). It has been excerpted and updated with permission of Harvard Environmental Law Review and Shelley Welton. Please see the full article for footnotes and sources.

1. PETER FOX-PENNER, SMART POWER: CLIMATE CHANGE, THE SMART GRID, AND THE FUTURE OF ELECTRIC UTILITIES 80 (2010).
2. See generally, e.g., Alexandra B. Klass & Elizabeth J. Wilson, *Interstate Transmission Challenges for Renewable Energy: A Federalism Mismatch*, 65 VAND. L. REV. 1801 (2012).
3. See Nat’l Council on Elec. Policy, *Updating the Electric Grid: An Introduction to Non-Transmission Alternatives for Policymakers* 1 (2009).
4. See Ashley C. Brown & Jim Rossi, *Siting Transmission Lines in a Changed Milieu: Evolving Notions of the “Public Interest” in Balancing State and Regional Considerations*, 81 U. COLO. L. REV. 705, 710–13 (2010) (detailing the problems with the multi-layered approval process for transmission, including state and sometimes local approvals).

5. See, e.g., FERC Order No. 2000, *Regional Transmission Organizations*, 65 Fed. Reg. 810, 810 (Jan. 6, 2000) (codified at 18 C.F.R. pt. 35) [hereinafter Order 2000].

comparable consideration, but there are clear reasons that this process is likely to fail, making these reforms cosmetic rather than substantive. If FERC truly intends to promote non-transmission alternatives to a place of parity, then it has more work to do.

II. Non-Transmission Alternatives and Transmission Planning

A. Non-Transmission Alternatives

Non-transmission alternatives are any resource or configuration of resources that can replace or delay the need for additional transmission.⁶ These alternatives include energy efficiency, demand response, and distributed generation (often collectively called “distributed energy resources”); as well as energy storage and centralized generation sited near load.⁷ Within the transmission planning context, all of these technologies are grouped together under the label “non-transmission alternatives,” as they are weighed against a specific proposed transmission project as a possibly superior solution. A non-transmission alternative might also be a hybrid solution, employing some transmission capacity, but reducing the overall amount of new transmission by strategically utilizing some distributed energy resources.⁸

Non-transmission alternatives’ chief benefit is their ability to serve as a cost-effective substitute for transmission projects, negating or delaying the need to build a new line. They also have several co-benefits. By subjecting transmission to competition, non-transmission alternatives may help lower the future price of transmission and reduce the need for subsidiary investments in distribution infrastructure.⁹ Distributed energy solutions also cut the overall amount of power flowing through the system, thereby easing congestion and further lowering electricity bills. Distributed energy solutions also often reduce air pollutants, water usage, land usage, and carbon emissions when compared to a transmission solution. Utilizing these alternatives in place of transmission might also help grow the marketplace for these relatively new technologies, helping their own costs fall as well.

Despite their promise, non-transmission alternatives—in particular distributed energy resources—have played a

6. See NEW ENGLAND STATES COMM. ON ELEC., REGIONAL FRAMEWORK FOR NON-TRANSMISSION ALTERNATIVES ANALYSIS 2 n.2 (2012), <http://perma.cc/7QTZ-ZL8X>; Elizabeth Watson & Kenneth Colburn, *Looking Beyond Transmission: FERC Order 1000 and the Case for Alternative Solutions*, PUB. UTIL. FORTNIGHTLY, Apr. 2013, at 37, <http://perma.cc/5FTL-N85D>.
7. See Watson & Colburn, *supra* note 6, at 37.
8. NEW ENGLAND STATES COMM. ON ELEC., *supra* note 6, at 6 n.11. “Demand-side” in this context refers to resources that reduce demand, rather than increase supply.
9. See Scott Hempling, “Non-Transmission Alternatives”: FERC’s “Comparable Consideration” Needs Correction 7 (May 2013), <http://perma.cc/EH8L-TQ7E>.

limited role in meeting electricity grid constraints to date. In part, this limited role is attributable to the emerging nature of these technologies. But there is a second, more pervasive reason that non-transmission alternatives have not yet gained traction as a viable alternative to transmission, which forms the crux of this Article’s argument: transmission planning processes are flawed in ways that prevent their fair consideration.

B. An Introduction to Transmission Planning

Two hundred thousand miles of high-voltage transmission lines traverse the United States in historical rather than optimal patterns, and hundreds of individual utilities own portions of this larger system.¹⁰ Transmission planning attempts to coordinate these entities in order to build the additional transmission necessary to maintain reliability, reduce congestion, and connect new resources to load.¹¹ It is a critical part of maintaining a functioning electricity grid, given the grid’s disparate ownership patterns but inherent interconnectedness.¹²

During transmission planning, grid operators project the need for new transmission—based on anticipated electricity supply and demand growth—and select projects to meet those needs. In the past few decades, transmission planning has evolved from a utility-by-utility exercise into a more coordinated regional endeavor. Two-thirds of the country’s transmission planning is governed by “Regional Transmission Organizations” (RTOs) or “Independent System Operators” (ISOs).¹³ These not-for-profit organizations, comprised of member utilities, run the grid’s daily operations and plan for future grid expansions on a regionally efficient scale.¹⁴ In those regions of the country that have chosen not to form an ISO or RTO, FERC requires that utilities work together to develop “an open, transparent, and coordinated transmission planning process” among transmission providers and stakeholders in the region.¹⁵ Within these regional planning processes (RTO/ISO or otherwise), non-transmission alternatives are required to be considered on a comparable basis to transmission resources.¹⁶ But FERC has not set forth any specific requirements

10. Klass & Wilson, *supra* note 2, at 1805, 1808.

11. See *Transmission Infrastructure: Hearing on Legislation Regarding Electric Transmission Lines Before the S. Comm. on Energy & Natural Res.*, 111th Cong. 8, at 2, 7 (2009) (statement of Jon Wellinghoff, then-Acting Chairman, FERC).

12. See *id.*

13. FERC Order No. 1000, Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Facilities, 76 Fed. Reg. 49,842, 49,869 (Aug. 11, 2011) (codified at 18 C.F.R. pt. 35).

14. See Order 2000, *supra* note 5, at 813–15.

15. FERC Order No. 890, Preventing Undue Discrimination and Preference in Transmission Service, 72 Fed. Reg. 12,266, 12,267 (Mar. 15, 2007) (codified at 18 C.F.R. pt. 37).

16. *Id.* at 12,326 (“[W]here demand resources are capable of providing the functions assessed in a transmission planning process, and can be relied

for what comparability requires, and this regulatory choice significantly limits the effect of its command.

III. Non-Transmission Alternatives' Persistent Challenges

FERC has over-relied on participatory reforms to fix a process that is substantively hostile to non-transmission alternatives. In translating FERC's broad mandates into concrete planning mechanisms and incentives, regions have failed to craft frameworks capable of elevating non-transmission alternatives to a place of true parity. This part first describes FERC's requirements with respect to non-transmission alternatives, and then outlines three challenges that non-transmission alternatives continue to face in spite of FERC's reforms.

A. Non-Transmission Alternatives in Transmission Planning Today

FERC's directives to regions with respect to non-transmission alternatives are relatively vague. FERC identifies Order 890 as the genesis of its comparable consideration requirement for non-transmission alternatives. In that order, FERC recognizes that "where demand resources are capable of providing the functions assessed in a transmission planning process, and can be relied upon on a long-term basis, they should be permitted to participate in that process on a comparable basis."¹⁷ In its clarification order, Order 890-A, FERC again reiterated that "advanced technologies and demand-side resources must be treated comparably where appropriate in the transmission planning process and, thus, the transmission provider's consideration of solutions should be technology neutral."¹⁸

Order 1000 builds upon these requirements to explicitly require "comparable consideration of transmission and non-transmission alternatives." It then, however, explains that stakeholders and public utility transmission providers know best how to manage this consideration, and that FERC will not establish specific metrics to be used to compare non-transmission alternatives and transmission alternatives.¹⁹

In response to Order 1000, regions were required to file submissions to FERC explaining how their regional transmission planning processes complied with the requirements of the Order.²⁰ By and large, FERC has approved regional

filings that provide little detail about how the particular features of non-transmission alternatives will be included in the comparability process, and that rely on stakeholders to put forth any proposals for non-transmission alternatives.²¹ To date, this strategy has proven ineffective: public interest organizations have observed in filings to FERC a "virtually complete absence . . . of stakeholder proposals" for NTAs.²² The next section explains why FERC's process-focused, participatory approach to promoting non-transmission alternatives is unlikely to achieve the parity that the agency ostensibly desires.

B. The Challenges Non-Transmission Alternatives Face

I. Misaligned Expertise and Incentives

The first challenge created by FERC's weakly enforced comparable consideration mandate is that there is no one with the right match of expertise and incentives to act as a serious proponent of non-transmission alternatives. Regional processes place no obligation on any party to put forth potential non-transmission alternatives. Instead, these processes rely on participants to voluntarily generate potential non-transmission solutions, which regional planners then commit to evaluate on a comparable basis. FERC has approved of these processes, interpreting "comparable consideration" only to require comparability once several independently generated proposals are on the table. This version of comparability, however, is unlikely to ever result in proposals for non-transmission alternatives, because no stakeholder or provider is likely to champion non-transmission alternatives.

Transmission providers themselves are unlikely to propose a non-transmission alternative because it cuts against their bottom line. Whereas these utilities earn a regulated rate of return on investment for any transmission projects, investing in energy efficiency, demand response, and distributed generation—strategies that reduce electricity consumption—often *lowers* transmission providers' profits. In RTO regions, it might seem that the RTO itself could be a good candidate for proposing potentially lower-cost,

upon a long-term basis, they should be permitted to participate in that process on a comparable basis."); Order 1000, *supra* note 13, at 49,869.

17. FERC Order No. 890, Preventing Undue Discrimination and Preference in Transmission Service, 72 Fed. Reg. 12,266, 12,326 (Mar. 15, 2007) (codified at 18 C.F.R. pts. 35, 37).

18. FERC Order No. 890-A, Preventing Undue Discrimination and Preference in Transmission Service, 73 Fed. Reg. 2984, 3009 (Jan. 16, 2008) (codified at 18 C.F.R. pt. 37).

19. Order 1000, *supra* note 13, at 49,869.

20. Beginning with its Order 888, FERC requires utilities to "file open access non-discriminatory transmission tariffs that contain minimum terms and conditions of non-discriminatory service." FERC Order No. 888, Promoting Wholesale Competition Through Open Access Non-Discriminatory

Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities, 61 Fed. Reg. 21,540, 21,541 (May 10, 1996).

21. In a few regions, FERC did push back against certain burdens imposed on non-transmission alternatives, but not required for proposed transmission projects. *See, e.g.*, Order on Compliance Filing, Pub. Serv. Co. of Colo., 142 FERC ¶ 61,206, at ¶¶ 89–90 (Mar. 22, 2013) (FERC Docket Nos. ER13-75-000 et al.) (requiring the WestConnect region reconsider its plans to subject non-transmission alternatives to the same information and fee requirements as transmission proposals, given their differing natures); Order on Compliance Filing, Avista Corp., 143 FERC ¶ 61,255, at ¶¶ 76–81 (June 20, 2013) (FERC Docket Nos. ER13-93-000 et al.) (rejecting language in ColumbiaGrid participants' proposed tariffs that would have required the study team to subject non-transmission alternatives alone to a determination that "such alternative[s] [have] a reasonable degree of development").

22. Motion to Intervene and Protest of Public Interest Organizations at 21, Midwest Indep. Transmission Sys. Operator, Inc. & Midwest Transmission Owners, FERC Docket Nos. ER13-186-000, ER13-897-000, ER13-187-001 (Dec. 10, 2012).

more-effective non-transmission alternatives as regional solutions. But RTOs, with their central focus on grid reliability and management, are at risk of fostering a “transmission-first culture” given that their employees tend to have expertise in transmission development.²³ Moreover, the voluntary structure of RTOs “has ended up leaving those entities [who can exit, including transmission owners] with disproportionate influence.”²⁴

It falls on stakeholders, then, to take up the mantle of non-transmission alternatives. Several sophisticated regional- and national-scale environmental non-profit organizations have actively intervened in FERC Order 1000 compliance processes to encourage regions to create procedures receptive to non-transmission alternatives.²⁵ But these entities have no experience with on-the-ground implementation of energy efficiency, demand response, or distributed generation, and have limited technical capacity to engage in the kind of large-scale modeling and studies that would be necessary. Conversely, those entities with the most on-the-ground experience with distributed energy programs—Energy Service Companies, who interface with customers to run demand response programs and install energy efficiency technologies—lack any incentive to focus on packaging distributed energy resources specifically into regional transmission solutions. These companies also often operate at a smaller geographic scale than might be necessary to propose a transmission-level project.

States are the stakeholders that might seem best positioned to promote non-transmission alternatives, but there is reason to doubt that states adequately take on this function in the regional process. Many states have adopted mandates and other mechanisms for promoting energy efficiency, demand response, and distributed generation within their state borders. However, what is useful for the purpose of regional transmission planning is whether coordinated activity across states might result in a decision to promote *more* distributed energy than any state has decided to do on its own, because it might avoid the need for building certain transmission infrastructure. Accordingly—at least without cost allocation reform, discussed *infra*—it is unlikely that a single state would emerge as a champion of a regional non-transmission alternative, given that it would be taking on the task and expense of building the non-transmission alternative without reaping full benefits.

Ideally, a team of states might work together to examine the possibility of additional, cross-state distributed energy solutions that could function in place of new transmission infrastructure. One region—the Northeast—is actively pursuing just such a collaboration, but it is unclear whether this strategy will achieve success.

2. The Comparability Challenge

Even if an entity could overcome these disincentives and put forth a reasonable non-transmission alternative for comparable consideration, there remains a second structural challenge: it is far from clear how comparable consideration of non-transmission alternatives would or could be achieved in regional processes. Regions are charged with developing metrics to compare various proposed solutions.²⁶ In practice, when comparing two potential transmission projects, such metrics logically focus on economic considerations that differentiate the projects from one another.

Fitting non-transmission alternatives into these frameworks adds a layer of complexity. Non-transmission alternatives often bring co-benefits, which may include lowering air pollution, improving health and the comfort of homes, and reducing strain on the electric grid.²⁷ In many cases, such benefits are likely to be substantial. But there is a legal hurdle to incorporating such benefits into the regional comparability analysis. FERC and the courts understand the agency’s authority to ensure “just and reasonable” transmission rates only to include economic considerations, *not* environmental concerns.²⁸

For this reason, non-transmission alternatives face a comparability conundrum. Ignoring non-transmission alternatives’ co-benefits undervalues their full societal worth. Society would be better off if regions selected non-transmission alternatives whenever their total societal costs were lower than the next best transmission alternative. Yet there is no legal basis for FERC to consider options that are rendered superior on the basis of overall societal benefits alone. Here, then, is one place where FERC might have recognized that there are limitations to what regions can do to incorporate these non-transmission alternatives. Instead, FERC chose to pass the buck to regional planners to design comparability metrics.²⁹

23. Scott Hempling, Order 1000: Can We Make the Transmission Provider’s Obligation Effective and Enforceable? 22 (Mar. 2012) (paper prepared for the Sustainable FERC Project), <http://perma.cc/G4NQ-6R3X>; see also Watson & Colburn, *supra* note 6, at 38.

24. Michael H. Dworkin & Rachel Aslin Goldwasser, *Ensuring Consideration of the Public Interest in the Governance and Accountability of Regional Transmission Organizations*, 28 ENERGY L.J. 543, 579 n.200 (2007) (quoting Memorandum from Roy Thilly, President and Chief Executive Officer of Wisconsin Public Power, Inc., to Mariah Sotelino (Sept. 25, 2007) (alterations in Dworkin & Goldwasser)); Pub. Util. District No. 1 v. FERC, 272 F.3d 607, 613 (D.C. Cir. 2001) (dismissing a challenge by utilities to FERC Order 2000 on several grounds, including the fact that RTO membership is voluntary).

25. See generally, e.g., Motion to Intervene and Protest of Public Interest Organizations, *supra* note 22.

26. Order 1000, *supra* note 13, at 49,869.

27. See Watson & Colburn, *supra* note 6, at 37–38; CHRIS NEME & RICH SEDANO, REGULATORY ASSISTANCE PROJECT, US EXPERIENCE WITH EFFICIENCY AS A TRANSMISSION AND DISTRIBUTION SYSTEM RESOURCE 18 (2012), <http://perma.cc/Q8B9-PD4H>.

28. See Grand Council of Crees (of Quebec) v. FERC, 198 F.3d 950, 956–57 (D.C. Cir. 2000) (reviewing cases and FERC decisions and finding that, “[u]nsurprisingly, the Supreme Court has never indicated that the discretion of an agency setting ‘just and reasonable’ rates for sale of a simple, fungible product or service should, or even could, encompass considerations of environmental impact (except, of course, as the need to meet environmental requirements may affect the firm’s costs)”).

29. See Order 1000, *supra* note 13, at 49,869.

3. Cost Allocation and Jurisdictional Boundaries

The most fatal challenge facing non-transmission alternatives is one of funding. In Order 1000, FERC observed that regions faced difficulties funding transmission lines that would be constructed by a single utility, but served to meet a larger regional need for additional transmission infrastructure. To remedy this problem, Order 1000 requires regions to adopt a methodology for forcing utilities with the region to apportion and contribute to the costs of transmission projects that benefit multiple entities. Requiring these regional “cost allocation” methodologies counters what had previously been a “significant risk” of transmission underdevelopment.³⁰

However, in the same order, FERC explicitly refused to extend cost allocation to non-transmission alternatives.³¹ This decision effectively renders non-transmission alternatives infeasible by denying them a viable source of regional financing. No developer will propose a non-transmission alternative financed only by its customers, when much of the non-transmission alternative’s benefit comes from its role in filling a regional transmission need. In contrast, developers will have ample incentive to put forth proposed transmission projects—even if less efficient and effective than a non-transmission alternative—given the guarantee that, if selected in a regional plan, costs will be apportioned among beneficiaries.

FERC said nothing about why it chose to place cost allocation for non-transmission alternatives “beyond the scope” of Order 1000, but the most likely reason is that FERC was uncertain whether its jurisdiction extended to allowing cost allocation for non-transmission alternatives. Allowing these small-scale distributed resources to qualify for regional cost allocation would move RTOs and regional transmission planners closer to the exclusively state-controlled domain of retail electricity sales.³² However, as the next section explains, recent Supreme Court precedent might cause FERC to re-evaluate its timidity on this score.

IV. Meaningful Reforms, Honest Admissions

FERC’s approach to non-transmission alternatives is troubling because the Commission has lacked forthrightness about the poor fit between its means and ends. FERC has taken a hands-off, stakeholder- and delegation-focused approach to non-transmission alternatives despite knowing that there are significant risks of discrimination and bias across RTOs, ISOs, and unorganized regions—risks that have *driven* many of its reforms over the last twenty years. Consequently, FERC’s regional delegates can assert that FERC has approved their methodologies for accord-

ing non-transmission alternatives comparable treatment, while in point of fact the structure of transmission planning offers nothing of the sort.

There are several reforms that FERC could undertake to create more truly “technology neutral” transmission planning processes.³³ This Article outlines four of what it judges to be the most feasible and effective reforms below. It also argues, however, that irrespective of whether FERC pursues these reforms, it should also engage in more institutional honesty regarding what it has accomplished, and can accomplish, with respect to promoting non-transmission alternatives. Such honesty is crucial to send the appropriate message to stakeholders, Congress, and the states about how law and policy may need to evolve to facilitate true comparable consideration.

A. Require Regional Analysis of Non-Transmission Alternatives

Transmission providers themselves are in the best position to propose non-transmission alternatives, but have no incentive to do so. An affirmative burden placed on these best-positioned entities to analyze reasonable non-transmission alternatives seems appropriate.³⁴ An obligation on transmission providers themselves accomplishes two objectives: first, it helps mitigate the transmission-first culture that dominates these entities by requiring them to look beyond their financially and technically preferred solutions. Second, it puts the entity with the most knowledge and expertise in the position of primary evaluator of potential non-transmission alternatives. Stakeholders can then assume the more appropriate role of monitoring the adequacy of these analyses.

A requirement for RTOs and transmission providers to make a good faith effort to design and evaluate non-transmission alternatives would also begin to unlock the comparability conundrum, as regions would be forced to create metrics and evaluation criteria to compare transmission and non-transmission alternatives. Similarly, such a requirement would further our understanding of the true potential that these alternatives hold as regional solutions.

B. Deny Cost Allocation to Inferior Transmission Alternatives

FERC could also require regions to make clear that when a non-transmission alternative out-performs a transmission option, the transmission option *may not be included* in the regional transmission plan for purposes of cost allocation. In Order 1000, FERC alluded to this possibility, but endorsed it only as permissible.³⁵ But in fact, it seems

30. Order 1000, *supra* note 13, at 49,920.

31. *Id.* at 49,956 (“[W]e conclude that the issue of cost recovery for non-transmission solutions is beyond the scope of the transmission cost allocation reforms we are adopting here . . .”).

32. See 16 U.S.C. § 824(a) (2012).

33. Order 890, *supra* note 15, at 3009.

34. A burden of this type could likely be justified under FERC’s general jurisdiction over transmission planning, which it has asserted as part of its prerogative to keep transmission rates “just and reasonable.” See, e.g., Order 1000, *supra* note 13, at 49,849.

35. FERC Order No. 1000-A, Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities, 77 Fed. Reg. 32,184,

not only permissible but arguably obligatory under FERC's obligation to ensure that transmission rates are "just and reasonable"³⁶; if a non-transmission alternative were cheaper and more effective than a transmission solution, it would be unreasonable to select the transmission project. If FERC were to clarify that the obligation to ensure reasonable costs precludes using regional cost allocation for a transmission project that has failed in comparison to a non-transmission alternative, regions, states, and/or providers might become more receptive to cost allocation for non-transmission alternatives, or might look for other collaborative funding solutions.

C. Elaborate a More Complete "Comparable Consideration" Methodology

In approving regional transmission planning processes, FERC could decide to be more rigorous in what qualifies as the appropriate elaboration of a regional comparable consideration methodology. FERC has chosen to permit mere recitation of a promise to grant comparable consideration to suffice as proof of a sufficient, fair process. The agency could bolster its requirements regarding comparability either by maintaining regional flexibility but asking for more detail in regional tariffs, or by elaborating its own requirements or guidelines for what must be considered during a comparability evaluation.

D. Extend Cost Allocation to Non-Transmission Alternatives

In its original 2015 version, this article asserted that in refusing to extend cost allocation to non-transmission alternatives, FERC appropriately considered itself jurisdictionally constrained by the D.C. Circuit's decision in *Elec. Power Supply Ass'n v. FERC*, 753 F.3d 216 (D.C. Cir. 2014) ("*EPSA*"). However, the Supreme Court's recent reversal of that decision, 136 S. Ct. 760 (2016), should cause FERC to reevaluate this conclusion.

EPSA concerned the permissibility of FERC rules that dictate terms for demand response's participation in wholesale electricity markets. In upholding FERC's rules, the Supreme Court clarified that under the Federal Power Act (FPA), FERC can regulate any practices that "directly affect" wholesale electricity and interstate transmission rates.³⁷

Cost allocation for non-transmission alternatives would likely qualify as having a direct effect on transmission rates. To be sure, non-transmission alternatives do not immediately lower the marginal cost of transmission in the same way demand response lowers wholesale electricity rates, given the longer time horizons of transmission planning

and construction. Nevertheless, selection of a more cost-effective non-transmission alternative during transmission planning would lead directly to lower transmission rates for all beneficiaries of the project.³⁸ Thus, under the logic of *EPSA*, cost allocation for non-transmission alternatives, which is decidedly necessary to ensure non-transmission alternatives' full and effective participation in transmission planning, should fall within the scope of a practice "directly affecting" transmission rates. Accordingly, and as suggested by certain language in the *EPSA* opinion, FERC may now have not just the authority, but "indeed, the duty" to take this step towards ensuring "just and reasonable" transmission rates.³⁹

E. Honest Admissions

Given recent turmoil over the boundaries of its jurisdiction, FERC has understandable reasons for having moved slowly on non-transmission alternatives. Even so, if FERC believes (as it says) that incorporating non-transmission alternatives will create better transmission-planning processes, then it has ill-served its responsibility to maintain just and reasonable transmission rates by pretending to have solved a problem where it has barely scratched the surface. Where it believes itself jurisdictionally constrained, FERC might benefit the policy process by airing some of the reasons for its hesitation more publicly. There are certainly limitations to this suggestion, the most obvious being that FERC would want to avoid making any admissions that might come to haunt it in future litigation. Nevertheless, more signaling by FERC about the ways in which it believes it cannot go the full distance to achieve adopted aims would be beneficial for the deliberative democratic process.⁴⁰

By admitting those policy spaces where it feels unable to cope unilaterally with the burden of utilizing the grossly outdated FPA to solve modern day grid and transmission-planning constraints, FERC could better advance a regional and national conversation about the best ways to address such challenges. Ultimately, such delineation of FERC's own fallibilities and legal constraints seems an important part of being a responsible agency working with a statute designed for a different era.

V. Conclusion

Current transmission planning processes are unlikely to result in selection and implementation of non-transmission solutions, even where they are demonstrably superior. This shortcoming is obviously bad for proponents of distributed energy. It is also bad for those who hope to implement

32,216 (May 31, 2013) (to be codified at 18 C.F.R. pt. 35) ("It may be the case that non-transmission alternatives may result in a regional transmission planning process deciding that a proposed transmission facility is not a more efficient or cost-effective solution and, accordingly, that facility may not be selected in the regional transmission plan for purposes of cost allocation.")

36. See 16 U.S.C. § 824d.

37. Slip Op. at 15.

38. As FERC did with demand response, it might institute a "net benefits" test to ensure that all utilities affected by cost allocation for non-transmission alternatives would in fact see a reduction in transmission costs. Cf. *EPSA*, Slip Op. at 10.

39. Slip Op. at 15.

40. Cf. Sharon B. Jacobs, *Bypassing Federalism and the Administrative Law of Negawatts*, 100 IOWA L. REV. 885, 917 (2015) (finding that agencies are not as well situated in the deliberative process as Congress to make reforms that shift jurisdictional boundaries).

significant but thoughtful grid expansion in the coming decades. More transmission is critically needed to update infrastructure and to keep pace with renewable resource development, but each transmission line is also a fractious, expensive, and environmentally damaging endeavor. Where transmission can be avoided, it should be. FERC knows this, but has not yet translated its aspirations into effective regulations. Further reforms will be necessary to

achieve true parity, and FERC should consider using its recently affirmed jurisdiction over practices affecting transmission rates to extend cost allocation to non-transmission alternatives. In the meantime, however, FERC needs a more forthright approach to non-transmission alternatives, which articulates the limitations of a stakeholder-driven comparable consideration mandate and seeks creative, collaborative solutions and reforms.

C O M M E N T

Considering Non-Transmission Alternatives

by Randolph Elliott

Randolph Elliott is Senior Regulatory Counsel at the American Public Power Association. The views presented here are his own and do not necessarily represent the positions of APPA or its members. He was counsel for APPA or other parties in a number of the cases discussed.

Shelley Welton's *Non-Transmission Alternatives*¹ is a timely examination of an important issue in energy and environmental policy: What regulatory and business structures would best enable the Nation to plan, build, and pay for the right mix of electric transmission and alternative facilities?

The Article explores reasons why the regional transmission planning process required by the Federal Energy Regulatory Commission's Order No. 1000² is not up to that task. It then proposes some reforms that FERC should adopt. As revised for publication here, it suggests that the Supreme Court's recent decision in *FERC v. Electric Power Supply Association*³ empowers FERC to eliminate a funding barrier for alternative facilities by providing for the regional allocation of their costs.

As the Article describes, Order No. 1000 provides little guidance on how non-transmission alternatives are to be considered alongside transmission in regional planning. This Comment notes ways FERC could clarify key terms used in Order No. 1000—including “non-transmission alternatives” and “comparability”—to better define the roles of the commission and other public agencies and private actors.

One unexplored issue in the Article is the role of transmission customers—particularly load-serving entities—as “stakeholders” in the transmission-planning process. These entities will have the incentive and the ability to be important proponents of non-transmission alternatives.

While the full implications of *FERC v. EPSA* are unclear at this early juncture, the decision on its face does not appear to rest on broad enough principles to support federal jurisdiction over cost allocation for most non-transmission alternatives.

I. Clarifying the Terms of the Discussion

A. “Non-Transmission Alternatives”

The Article defines the term “non-transmission alternatives” functionally as “any resource or configuration of resources that can replace or delay the need for additional transmission,” which includes “energy efficiency, demand response, and distributed generation . . . as well as energy storage and centralized generation sited near load.”⁴

Order No. 1000 does not define the term, although it refers to “generation, demand response, and energy efficiency options” as alternatives considered in local resource planning and that “may be” considered in regional transmission planning.⁵

Order No. 1000 also does not address FERC's jurisdiction over the various kinds of non-transmission alternatives. But with minor exceptions, *e.g.*, some energy storage facilities, facilities that are *alternatives* to transmission facilities would not themselves be transmission facilities subject to FERC's jurisdiction.⁶ Indeed, most of these alternative facilities would be excluded from FERC's jurisdiction as “facilities used for the generation of electric energy or . . . in local distribution . . . or . . . for the transmission of electric energy consumed wholly by the transmitter.”⁷ And most alternative non-transmission *services* would not be provided “for or in connection with” interstate transmission service; to the contrary, they would be substitutes for transmission service. Thus, it is difficult to see how the cost of most of these alternative facilities and services would be recoverable in FERC-jurisdictional rates for transmission service.⁸

Moreover, these nascent alternative technologies, products, services, and facilities are being developed, by utilities

1. Shelley Welton, *Non-Transmission Alternatives*, 39 HARV. ENVTL. L. REV. 456 (2015).

2. Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities, Order No. 1000, 76 Fed. Reg. 49,842 (Aug. 11, 2011), *order on reh'g*, Order No. 1000-A, 77 Fed. Reg. 32,184 (May 31, 2012), *order on reh'g*, Order No. 1000-B, 77 Fed. Reg. 64,890 (Oct. 24, 2012), *aff'd*, S.C. Pub. Serv. Auth. v. FERC, 762 F.3d 41 (D.C. Cir. 2014).

3. No. 14-840 (U.S. Jan. 25, 2016).

4. Welton, *supra* note 1.

5. Order No. 1000, 76 Fed. Reg. at 49,869 [P 154]. *See generally id.* at 49,868–69 [PP 148, 153–55].

6. 16 U.S.C. § 824(a).

7. *Id.*

8. This issue is important in considering regional cost allocation. *See infra* Part III.

and third parties, primarily at the local distribution level.⁹ State public utility commissions are front and center in regulating these matters.¹⁰ So far, FERC has played almost no regulatory role, except for wholesale demand response in regional transmission organization (RTO) markets.¹¹ Whether FERC can or should use Order No. 1000 to provide a federal regulatory overlay of some subset of non-transmission alternatives, and what would be gained and lost in such an effort, is the key policy question raised by the Article. But to date FERC has remained silent on the matter of its own jurisdictional limits, as the Article notes.

B. “Comparability”

When FERC required “comparable” consideration of non-transmission alternatives in the regional transmission planning process in Order No. 1000 in 2012, it was applying a comparability principle with a long history in FERC transmission orders.¹²

Order No. 1000’s comparability requirement is a remedy for “unduly discriminatory” transmission service by public utility transmission owners and operators in violation of the statute.¹³ Specifically, Order No. 1000 applies to regional transmission planning “the comparability transmission planning principle stated in Order Nos. 890 and 890-A” in 2007.¹⁴ This principle “requires that the interests of public utility transmission providers and similarly situated customers be treated comparably in regional transmission planning.”¹⁵ In 1996, FERC had applied this comparability requirement to open access transmission service and rates in Order No. 888.¹⁶ The term “compara-

bility” first entered the FERC transmission lexicon even earlier, in a tariff order from 1994.¹⁷

This history is important in assessing the Article’s call for FERC to “Elaborate a More Complete ‘Comparable Consideration’ Methodology.”¹⁸ Because the principle of comparability has this specific, established meaning in FERC transmission policy, and Order No.1000 applies that principle, the Article appears to seek not just a better-explained methodology, but a different, broader methodology, one focused not on transmission customers’ non-transmission alternatives, but on non-transmission alternatives *qua* alternatives.

Whether FERC intended that policy in Order No. 1000 or wishes to adopt such a policy now, it needs to provide a more detailed explanation of its action. And it would be less confusing if FERC used a different term than “comparability” for this regulatory standard—or better yet, if it simply identified the statutory standard it was applying and explained how it was being applied in this context.¹⁹ That approach would have the advantages of preserving the existing comparability principle and requiring FERC to articulate the legal and factual basis for ordering what would appear to be a different remedy for a different problem.

II. Creating Proponents of Non-Transmission Alternatives

The Article concludes that public utility transmission providers and RTOs have inherent biases against non-transmission alternatives and are unlikely to champion them.²⁰ While “stakeholders” in the regional transmission planning process could take on this responsibility, the Article concludes, for various reasons, that they also are unlikely to do so.²¹ With no proponent in sight, the Article recommends that FERC remedy the situation by commanding transmission providers and RTOs to propose and analyze reasonable non-transmission alternatives in the regional transmission planning process.²²

While much of this analysis of incentives and biases appears sound, the Article does not consider the primary stakeholders that Order No. 1000 seeks to protect in the regional transmission planning process—transmission customers, particularly load-serving entities, i.e., utilities

9. See, e.g., PETER FOX-PENNER, SMART POWER: CLIMATE CHANGE, THE SMART GRID, AND FUTURE OF ELECTRIC UTILITIES 157–74 (2010). The author posits two future models for the distribution utility, the “Smart Integrator” *see id.* at 175–88, and the “Energy Services Utility,” *see id.* at 189–202.

10. See, e.g., Reforming the Energy Vision, Case 14-M-0101 (N.Y. Pub. Serv. Comm. Apr. 24, 2014) (staff proposal).

11. See FERC v. EPSA.

12. See Order No. 1000, 76 Fed. Reg. at 49,869.

13. See Order No. 1000, 76 Fed. Reg. at 49,860 (citing 16 U.S.C. § 824e). The D.C. Circuit upheld FERC’s authority to issue Order No. 1000 on this basis. See S.C. Pub. Serv. Auth. v. FERC, 762 F.3d 41, 55–64 44 ELR 20197 (D.C. Cir. 2014).

14. Order No. 1000, 76 Fed. Reg. at 49,869. See *id.* at 49,868 (“the requirements of this Final Rule build on the following transmission planning principles that we required in Order No. 890: . . . (3) comparability . . .”). See Preventing Undue Discrimination and Preference in Transmission Service, Order No. 890, 72 Fed. Reg. 12,266, 12,327–28 (Mar. 15, 2007), FERC Stats. & Regs. ¶ 31,241 (2007), *order on reh’g*, Order No. 890-A, 73 Fed. Reg. 2,984 (Jan. 16, 2008), FERC Stats. & Regs. 31,261 (2007), *order on reh’g*, Order No. 890-B, 73 Fed. Reg. 39,092 (July 8, 2008), *order on reh’g*, Order No. 890-C, 74 Fed. Reg. 12,540 (Mar. 25, 2009), *order on clarification*, Order No. 890-D, 129 FERC ¶ 61,126 (2009). See also Order No. 890-A, 73 Fed. Reg. at 3,008–09.

15. Order No. 1000, 76 Fed. Reg. at 49,869 (citing Order No. 890, 72 Fed. Reg. at 12,327–28).

16. Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities, Order No. 888, 61 Fed. Reg. 21,540 (May 10, 1996), FERC Stats. & Regs. ¶ 31,036 (1996), *order on reh’g*, Order No. 888-A, 62 Fed. Reg. 12,274 (Mar. 14, 1997), FERC Stats. & Regs. ¶ 31,048 (1997) (Order No. 888-A), *order on reh’g*, Order No. 888-B, 81 FERC ¶ 61,248 (1997), *order on reh’g*, Order No. 888-C, 82 FERC ¶ 61,046 (1998), *aff’d in relevant part and remanded in part, sub nom.*

Transmission Access Policy Study Group v. FERC, 225 F.3d 667 (D.C. Cir. 2000), *aff’d sub nom.* New York v. FERC, 535 U.S. 1 (2002).

17. See *Am. Elec. Power Serv. Corp.*, 67 FERC ¶ 61,168, at 61,490 (1994) (declaring that a public utility’s open access transmission tariff that is not unduly discriminatory must offer service “on the same or comparable basis . . . as the transmission provider’s uses of its system” for “serving its native load customers” and for “serving wholesale requirements customers.”).

18. Welton, *supra* note 1.

19. See *Morgan Stanley Capital Group Inc. v. Pub. Util. Dist. No. 1*, 554 U.S. 527, 535 (2008) (observing that it would be preferable for FERC to explain that its “public interest” standard of review of wholesale power contract rates was simply an application of the statutory just-and-reasonable standard to contract rates).

20. Welton, *supra* note 1.

21. Welton, *supra* note 1.

22. Welton, *supra* note 1.

with a legal obligation (arising from statute, regulation, or contract) to serve end-use electric consumers (or in some cases, another load-serving entity).²³

Load-serving entities are well positioned to be proponents of non-transmission alternatives. Not only do they have an incentive to keep transmission rates low, they also have expertise in developing and implementing non-transmission alternatives such as distributed generation, demand response, and energy efficiency. As distribution utility service continues to evolve and innovate, load-serving entities should emerge as major proponents of non-transmission alternatives in local and regional transmission planning processes.

This is especially the case with public power and cooperative load-serving entities, which have strong incentives to keep transmission rates low and are able to finance the construction of non-transmission alternatives and to recover the costs from their customers.

Moreover, many public power utilities participate in regional “joint action agencies” to finance, build, and operate generation facilities and to provide themselves wholesale power supply and other services. Many distribution cooperatives are themselves members of regional “generation and transmission” (G&T) cooperatives that perform analogous functions for their member cooperatives. Joint-action agencies and G&T cooperatives may be in a position to aggregate the non-transmission alternatives developed and implemented by their participating member utilities. And by entering the market as proponents of large-scale non-transmission alternatives, these regional entities could provide a new form of “yardstick competition,” pressuring investor-owned utilities to follow suit and RTOs to adapt.²⁴

III. Extending Regional Cost Allocation to Non-Transmission Alternatives

The Article states that by refusing to extend regional cost allocation to non-transmission alternatives, Order No. 1000 “effectively renders non-transmission alternatives infeasible by denying them a viable source of regional financing.”²⁵ The Article suggests that the Supreme Court’s decision in *FERC v. EPSA* gives FERC authority to remedy this problem, because cost allocation for non-transmission alternatives “directly affects” transmission rates.²⁶

23. See 16 U.S.C. § 824q(a) (defining load-serving entity for purposes of FERC’s obligations under this statutory provision). See also S.C. Pub. Serv. Auth. v. FERC, 762 F.3d 41, 90-91, 44 ELR 20197 (affirming Order No. 1000’s compliance with FERC’s obligations under this statutory provision because the order is designed to ensure reliable service to load-serving entities).

24. Yardstick competition refers to the competitive pressure felt between neighboring utilities—especially the competitive pressure on privately owned electric utility companies provided by publicly and cooperatively owned utilities. See 2 ALFRED E. KAHN, *THE ECONOMICS OF REGULATION* 104–06, 319 (MIT 1988).

25. Welton, *supra* note 1.

26. Welton, *supra* note 1.

That conclusion, however, elides several apparent differences between the two situations:

- (1) Most non-transmission alternative facilities and services are well outside of FERC’s substantive jurisdiction, which is limited to interstate transmission and sales at wholesale.
- (2) Most non-transmission alternative services are not provided “for or in connection with”²⁷ FERC-jurisdictional transmission service, but rather in lieu of it.
- (3) The allocation of costs for most non-transmission alternative facilities and services would involve FERC in direct rate regulation of entities, services, and facilities outside its substantive jurisdiction.
- (4) The allocation of costs for most non-transmission alternative facilities and services is a “rule, regulation, [or] practice . . . affecting”²⁸ FERC-jurisdictional transmission rates only indirectly—far less directly than the way wholesale demand response resources affect wholesale energy rates in RTO markets.
- (5) States would have no control over the participation by non-transmission alternatives in FERC-ordered cost allocations of non-transmission alternatives selected for regional cost allocation in the regional transmission plan, whereas states have veto control over whether their state’s demand response resources participate in RTO wholesale markets.

It is therefore unclear how the decision in *FERC v. EPSA* would support the regional allocation of costs of non-transmission alternatives because they are substitutes for FERC-jurisdictional transmission service.

IV. Conclusions

A blurring of the state-federal jurisdictional lines between local distribution facilities and transmission facilities, between distribution utility services and bulk transmission services, and between retail rate matters and wholesale rate matters, is creating uncertainty among utilities, regulators, and legislators. Welton’s *Non-Transmission Alternatives* is helpful in illuminating many of these developing issues. Even if FERC does not adopt all of its recommendations, the Article points to areas where FERC could helpfully clarify a number of these issues.

27. 16 U.S.C. § 824d(a).

28. 16 U.S.C. § 824e(a).

C O M M E N T

Non-Transmission Alternatives, Distributed Energy Resources, and a Multi-Directional Grid

by Michael Panfil

Michael Panfil is an Attorney for the Environmental Defense Fund.

The electric sector is founded upon a basic principle: supply must balance demand at all times. Should one outstrip the other, reliability events—that is, the dreaded blackout—will occur. It’s an elemental and somewhat unique industry feature, and responsible for much of the layered and complex planning and forecasting embedded in the sector. A grocer who underestimates demand turns away the last few customers; a utility’s mistake will upset not only new but existing ones as well.

In furtherance of this principle, the sector has traditionally embarked upon a familiar pattern: supply is generated in place X, transported via transmission and distribution, and consumed in place Y. The Federal Energy Regulatory Commission (“FERC” or “Agency”) regulates the interstate portion of the process; state Public Utility Commissions (“PUC”) are responsible for the other side of this coin. These Commissions are charged with maintaining reliability or ensuring that supply and demand are balanced. They are likewise obligated to ensure that the resulting power is priced at ‘just and reasonable’ rates.

From 1,000 feet, the sector appears neatly organized. Two levels of government, working in coordination with clear lines of responsibility, to ensure reliable, cost-effective energy. Yet as Welton’s article illuminates, this is not the case. A review even one step beyond cursory examination reveals “persistent governance and jurisdictional hurdles.”¹ Welton provides a thorough and well thought-out analysis of these challenges, through the lens of transmission planning and non-transmission alternatives (“NTA”). And in doing so, Welton references the recent Supreme Court decision, *FERC v. Elec. Power Supply Ass’n*² (*FERC v. EPSA*), and suggests that the case may provide FERC with not only the authority, “but ‘indeed, the duty’” to ensure just and reasonable rates through non-traditional means, such as true parity in treatment of non-transmission alternatives.

Welton’s analysis is accurate, however both *FERC v. EPSA* and current transmission planning challenges are symptomatic of larger upheaval in the electric sector. This Comment endeavors to provide context for this upheaval, by first exploring and suggesting a cause for the ongoing foundational change. Next, the implications of *FERC v. EPSA* are discussed. This Comment ends with a broader estimation of how the sector could develop in the future in response to ongoing transformation.

I. Foundational Change in the Electric Sector

FERC, under the Federal Power Act (“FPA”), regulates interstate transactions; states regulate intrastate transactions. *FERC v. EPSA* notes “that statutory division generates a steady flow of jurisdictional disputes because—in point of fact if not of law—the wholesale and retail markets in electricity are inextricably linked.”³ Yet disputes are increasing; the Supreme Court has heard three FERC cases, all centered on jurisdiction, over the past two years.⁴ Numerous factors may contribute to this rise: heightened environmental concern, increased interconnectedness of the grid, and deregulation, to name a few.⁵ However, this Comment submits that a more systemic change is underway: the physical grid itself is changing from a uni-directional system to a multi-directional one.⁶

3. *Id.* at 1.

4. See *FERC v. EPSA*; see *Oneok, Inc. v. Learjet, Inc.* No. 13-271 (2015); see *CPV Maryland v. Talen Energy Marketing* No. 14-623 (currently undecided).

5. See PETER FOX-PENNER, *SMART POWER*, Island Press (2010) (for a greater discussion of factors contributing to electric sector reform).

6. Unlike, for example, environmental concern, which FERC has argued has no legal basis in the FPA, fundamental change in how the grid generates, transports, and consumes energy has clear impact upon the jurisdictional language of the FPA itself, which structured jurisdiction to a grid that did not contemplate the flow of energy from distributed energy resources. For this reason, this author believes that multi-directional energy flow has been the primary cause of increased jurisdictional disputes more than other possible reasons. See <http://texaselectricnews.com/ferc-chair-ferc-must-be-fuel-neutral-supreme-court-using-new-federal-state-line-test/> (FERC Commissioner Bey statement that his Agency is not an environmental regulator).

1. Shelley Welton, *Non-Transmission Alternatives*, 39 HARV. ENVTL. L. REV. 457, 460 (2016).

2. 136 S. Ct. 760 (2016).

Although supply and demand balancing is axiomatic, the ability to do so via ‘demand-side’ actions is relatively new, particularly in instances with substantial impact. Previously, demand was most cost-effectively and reliably balanced through increased supply. Today, however, “energy efficiency, demand response, and distributed generation; as well as energy storage and centralized generation sited near load”⁷ can be superior alternatives (collectively “DER”). This is true for not only NTAs, as relevant to transmission analysis, but also distribution planning, energy consumption, and energy capacity.

This multi-directional system is significant for a second reason: just as energy previously flowed in one direction, so too did information, from the end-use consumer to the utility. With the advent of advanced metering infrastructure and other ‘smart grid’ technologies, those on the ‘demand-side’ can not only install DERs, but understand when, how, and why such installations are more efficient than solely relying upon the ‘supply-side’ of the grid itself.

By functioning in an inherently different direction (that is, behind the meter retail customers impacting wholesale marketplaces and rates), these resources fit poorly within a jurisdictional divide that previously equated ‘retail’ with ‘consumer’ and ‘demand’. The resulting system is thus one imbued with a certain conflict: FERC must ensure ‘just and reasonable’ rates, but does not yet have a regulatory regime fully capable of recognizing, valuing, and accommodating demand-side resources capable of providing most ‘just and reasonable’ rates. And viewed through this frame, symptoms and FERC actions such as recent FERC Orders, NTA consideration in transmission planning, and cases like *FERC v. EPSA*, are not only expected but predictably more commonplace.⁸

II. FERC v. EPSA

FERC v. EPSA centers upon a jurisdictional dispute involving wholesale energy markets and a particular energy resource, demand response. At issue in this case was whether FERC could issue a policy (FERC Order 745) to regulate the inclusion and compensation of the resource in wholesale energy markets. Yet as Welton accurately suggests, the case has significant implications for other substantive inquiries, including transmission planning and NTAs. Federal and state jurisdictional boundaries, like two colliding tectonic plates, caused this particular eruption, and the Supreme Court decision rightly provides

guidance on not only how to navigate the outbreak but the underlying cause as well.

To resolve this core tension, the Court espoused a two-fold inquiry. First, the Supreme Court adopted a “commonsense construction of the FPA’s language, limiting FERC’s ‘affecting’ jurisdiction to rules or practices that ‘directly affect the wholesale rate.’”⁹ Second, the Court requires that FERC rules or practices must not “regulate *retail* electricity sales.”¹⁰ And a FERC rule or practice furthers the Agency’s mandate when that rule or practice ensures the wholesale rate is just and reasonable. Indeed, it could be reasonably assumed that when a rule or practice is found to further just and reasonable rates, FERC has not only the freedom, but also the duty, to act.

The decision further recognized that the law should allow for such economically efficient outcomes, noting that “wholesale and retail markets are not “hermetically sealed from each other.”¹¹ Rather, the grid is “interconnected . . . of near-nationwide scope.”¹² And thus the legal framework anticipates wholly valid FERC action that necessarily “[affects]—even substantially—the quantity or terms of retail sales.”¹³

The decision clearly indicates that FERC has jurisdictional room to maneuver in fulfilling its duty of ensuring just and reasonable rates. Indeed, FERC met the Court’s standard “with room to spare.”¹⁴ The relevant inquiry, then, is how FERC should proceed in the future within this reaffirmed jurisdictional space.

III. Implications for Future Action and Jurisdictional Debate

EPSA clearly holds that FERC may regulate wholesale demand response. Yet there are many other policies and practices FERC could enact to further just and reasonable rates while remaining within the “directly affecting” and “targeting” confines of the *EPSA* decision. Cost-effective distributed generation, energy efficiency, and aggregated energy storage may, if bid at wholesale, be within the Agency’s jurisdiction. As Welton argues, cost-allocation for NTAs may likewise fall under FERC jurisdiction as a “practice ‘directly affecting’ transmission rates.”¹⁵ Each action would directly affect and target wholesale activity and result in more just and reasonable rates. However, such actions would, like demand response and Order 745, utilize resources on what has traditionally been considered the

⁸ *But see also* Christopher Bateman & Jim Tripp, HARV. L. REV. (2014). Available at <http://harvardelr.com/wp-content/uploads/2014/08/Bateman-Tripp.pdf> (Arguing that FERC has a responsibility to consider environmental impacts in some instances).

⁷ Welton, *supra* note 1, at 465.

⁸ See *id.* for a far more robust discussion and analysis of recent FERC Orders.

⁹ *FERC v. EPSA* at 15.

¹⁰ *Id.* at 17.

¹¹ *Id.* at 18.

¹² *Id.* at 4.

¹³ *Id.* at 18.

¹⁴ *Id.* at 16.

¹⁵ Welton, *supra* note 1, at 502.

‘demand-side’ of the system. In the face of such change, litigation would be unsurprising.

Frequent litigation can be a symptom of transformative change in any sector.¹⁶ In this Author’s estimation, it portends a potential future for this industry imbued with improved market design and planning. This new multi-directional paradigm affords these benefits through not only advancing technological capability but more balanced access to information. As Nobel Prize laureate Joseph Stiglitz found, “even a small amount of information imperfection could have a profound effect on the nature of the equilibrium.”¹⁷ Yet Stiglitz also noted the importance of ‘sequencing’ and ‘pacing’ sector reforms to ensure efficient results.¹⁸ This, in addition to the need for certainty for market actors, suggests that although litigation may be an expected symptom, it could result in sub-optimal outcomes. *FERC v. EPSA* provides an important step in avoiding such detrimental outcome by creating new legal certainty, but does not itself provide a complete narrative. Iterative market design may thus be the best practical pathway to an improved electric grid. The resulting future, then, is one with an expectation that FERC should (and indeed, under a reasonable interpretation of the FPA, must) continue to incorporate and accommodate resources, processes, and pathways created from this burgeoning multi-directional system. The expected efficiencies and more just and reasonable ends demand nothing less.

IV. Conclusion

If impetus for FERC action, specifically for transmission planning and more generally for the electric grid, is expected, how then, should FERC act? One option is to follow an already established form: experimentation in federally regulated markets and regions followed by consistent policy. Indeed, demand response naturally evolved in this way, first instituted by regional marketplaces in varying ways and degrees, with FERC only creating uniform policy after the resource’s value became clear. States remain ‘laboratories of democracy,’ but viewed through the framework laid out above, FERC regulated markets may become the ‘laboratories of innovation’ for the increasingly interconnected electric sector.

EPSA suggests that the law should allow, encourage, and even compel this same evolution for other resources and processes, including NTAs and transmission planning. As Welton’s article concludes, “[w]here transmission can be avoided, it should be. FERC knows this, but has not yet translated its aspirations into effective regulations. Further reforms will be necessary to achieve true parity.” To further just and reasonable rates in an evolving multi-directional grid, much the same could be said for the sector as a whole.

16. See generally Lane Kenworthy et al., *The More Things Change . . . Business Litigation and Governance in the American Automobile Industry*, University of Wisconsin-Madison (1993), available at https://media.law.wisc.edu/s/c_8/xytyy/more_things_change.pdf.

17. Joseph Stiglitz, *Information and the Change in The Paradigm in Economics*, Prize Lecture (2001), at 475, available at http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/2001/stiglitz-lecture.pdf.

18. See JOSEPH STIGLITZ, *GLOBALIZATION AND ITS DISCONTENTS*, Norton (2002).

H O N O R A B L E M E N T I O N

Going the Way of the Dodo: De-Extinction, Dualisms, and Reframing Conservation

by Alejandro E. Camacho

Alejandro E. Camacho is a Professor of Law and Director, Center for Land, Environment,
and Natural Resources, University of California, Irvine School of Law.

I. Introduction

De-extinction, an emerging suite of selective breeding or biotechnological processes for reviving and releasing into the environment members or facsimiles of an extinct species, has been the subject of a recent surge of analysis in popular, scientific, and legal literature. Yet de-extinction raises more fundamental questions about the relationship between humans and nature and about the more and less useful ways that the law serves to navigate that relationship. In this sense, de-extinction may make the Dodo, until now a symbol of eternal obsolescence, the ultimate example of the inevitably dynamic character of ecological phenomena and the inextricable relationship of humans with nature.

Unfortunately, conservation laws likely to govern the revival and introduction of de-extinct species like the Dodo largely remain premised on outdated assumptions of nature as static and firmly divisible from human activity. Endangered species, invasive species, and public land management laws habitually privilege and even actively promote what they identify as natural and native over the unnatural and exotic. An analysis of the effect these laws might have on de-extinction efforts illustrates the limitations of the law's reliance on these crude dualisms. Currently, de-extinct species will often be obstructed as non-native and introduced (even if they might promote ecological function in a particular area) and may be allowed or promoted in locations they used to exist (even if likely to cause ecological damage). Accordingly, this Article argues that policymakers need to reformulate legal frameworks to be less dependent on simplistic dualisms in favor of cautious risk

assessment and adaptive management that recognizes the dynamism of nature and humanity's indivisibility from it.

II. The Ecological Risks and Benefits of De-Extinction

Proponents raise a range of possible benefits from engaging in de-extinction to conserve existing ecological resources. The introduction of a de-extinct species could improve the integrity and function for ecosystems that have declined due to the loss of the constituent species. In addition, technologies developed in the pursuit of de-extinction may have considerable co-benefits for efforts to recover critically endangered populations. Finally, the successful de-extinction of a species may serve to awaken interest in ecological conservation by providing a concrete illustration of the capacity of humans to shape and repair past and ongoing anthropogenic damage to ecosystems.

On the other hand, de-extinction efforts have several costs, and potentially significant risks, for conservation management. The most obvious costs are the direct economic expenses of carefully managing the laboratory revival and subsequent introduction effort. The introduction of de-extinct organisms to existing ecological systems also carries risks of harm, such as eroding biodiversity, disrupting ecosystems, and contributing to extinctions at receiving sites. Uncertainties for any such introduction will typically be greater than those for extant species, especially for long-extinct species. Finally, some raise concerns that de-extinction activities will divert already limited resources from more urgent conservation strategies.

One might think that legal rules governing whether a species can or should be revived and introduced would be based on an analysis that carefully considered these potential ecological benefits and risks. However, the laws governing wildlife management primarily seek to divide biological phenomena between those deemed natural and those deemed man-made, and/or between those labeled

The full version of this Article was originally published as: Alejandro E. Camacho, Going the Way of the Dodo: De-Extinction, Dualisms, and Reframing Conservation, 92 WASH. U.L. REV. 849 (2015). It has been excerpted and updated with permission of Washington University Law Review and Alejandro E. Camacho. Please see the full article for footnotes and sources.

native and others labeled exotic. These dichotomies largely fail to integrate a coherent methodology for evaluating the risks and benefits of relying on biotechnologies, like de-extinction, to advance ecological conservation.

III. Dualism in Endangered Species Laws

The existing Endangered Species Act (ESA) and its analogues are largely designed to preserve existing species in their historical and existing habitat, while minimizing those resources deemed to be artificial or artifactual. As such, they are ill-fitted for providing a comprehensive framework for both revival and introduction of de-extinct species. These laws are premised on simplistic dichotomies between humans and nature, and between native and non-native, that lead to incongruous results when humans inevitably affect ecological processes or when ecological conditions necessarily shift. Since the effect of being categorized under these laws as exotic is to be treated as tainted and provided less legal protection, the introduction of many revived species might be difficult or impossible, even in cases where significant ecological benefits are expected.

A. “Species” and a Focus on Natural

Under the existing ESA, a species could potentially be listed as endangered shortly after revival, if the revived organism qualified as a “species” and as “endangered.” A number of factors strongly suggest that a de-extinct population would be considered a “species” under the ESA. Then again, the fact that a de-extinct species would be, at least in part, an artifact of human action raises questions about the ESA’s applicability.

B. “Endangered” and a Focus on Native Range

Similarly, most (but not all) of the factors required for consideration of listing as “endangered” suggest listing a de-extinct species could be appropriate. On the other hand, the ESA defines “endangered” by reference to the species’ historical and existing native range, making its applicability to a de-extinct species confounding. As such, it is fairly clear that the ESA’s listing regime does not contemplate the revival of an extinct species, and the tethering of endangerment to existing range inextricably links value under the ESA to historical conditions and purported naturalness.

C. Captive-Breeding: Preferring Exotic

The ESA’s captive-bred wildlife regulations, which permit specified activities for certain populations held or bred in captivity, require species to be either not native to the United States or determined to be well protected in the wild. As such, these regulations serve to authenticate the disparate treatment of captive-bred organisms that are considered a human artifact (and thus for which human manipulation is acceptable) from those wild popu-

lations that are deemed natural. These regulations might in theory provide a potential pathway for certain genetic-engineering activities related to the continued propagation of a listed de-extinct species. However, as any newly de-extinct species is not going to be well protected in the wild, a revival program for native extinct species would be very difficult under the ESA’s existing framework for captive-bred wildlife.

D. Introductions: Preferring “Natural” and “Native”

Likewise, the ESA’s provisions likely to govern the introduction of revived species rely on dualisms that make little sense in light of de-extinction. These regulations create distinctions that disfavor introduced populations over “natural” ones. Moreover, regulations on introductions heavily favor the introduction of species in historically native areas—regardless of the species’ compatibility with existing conditions.

As de-extinct species may have no natural habitat and their ranges will often be at most unclear under the statute, their introduction raises a number of fundamental problems in the application of these native/exotic dualities. De-extinction thus again demonstrates the limitations of existing endangered species law’s myopic focus on advancing “natural” populations and preserving native, rather than assessing the potential benefits and risks in light of current ecological conditions.

IV. Dualism in Other Wildlife and Public Land Laws

As with endangered species laws, invasive species and public land laws treat species’ movement—in particular, any human-aided movement—with skepticism, to be resisted. In contrast, previously present biota and ecological inertia are treated as almost undeniable virtues. Many of these legal provisions are premised on a static, preservationist model of ecology that seeks to preserve species only where they exist or existed. These provisions draw from the prominent approach in natural resources law largely focused on a goal of historical preservation: preserving fidelity to historical conditions and preexisting biota, thus setting up a dualism between native and alien resources.

Alternatively, legal regimes seeking to manage wildlife focus on keeping humans separate from, and largely passive in their management of, these resources. The goal of such legal provisions is to avoid or minimize human involvement in species movement or the progression of reserved ecological areas. Such reserved lands and biota are considered valuable in large part because they are deemed wild or natural, separate from humans, and not artificial or an artifact of human activity.

However, reliance on native/exotic and human/nature dichotomies for invasive species and public lands law and management conflicts with current scientific understand-

ing, disregards the pervasive effects of humans on natural systems, and ultimately fails to foster the effective protection of ecological resources and their services. By cordoning off areas to be reserved for certain pre-existing resources (while keeping out all others), wildlife laws may impair the ecological function of reserved areas if conditions change and make the area inhospitable to those resources. Similarly, tying the value of a species' movement to the degree of human involvement systematically disadvantages human-aided species movement and bars introduction of ecological resources that may improve ecosystem function.

De-extinction brings these various incompatibilities into sharp focus. For legal provisions that emphasize historical preservation and the native/non-native divide, the introduction of a de-extinct species might be deemed permissible if initiated in a geographic area in which its previously extinct brethren historically existed, regardless of the harm it might create or its compatibility with the area's conditions. For legal provisions that promote wildness preservation and human/nature dualism, any introduced de-extinct species would be deemed exotic because humans instigated its presence. Though a subset of jurisdictions only bar an introduced de-extinct species if the species would be harmful to current resources, another subset deems non-native species invasive regardless of harm and bars any introduction of de-extinct species regardless of its benefits. Continued reliance on these incongruous distinctions is unlikely to promote long-term health of ecological resources.

A. *De-Extinction and the Problem of "Native"*

I. Promoting "Native"

In most jurisdictions, native species benefit from a range of proactive measures seeking to protect, promote, and restore native ecosystems and processes. Many federal land agencies, for instance, aim to sustain and enhance native ecological systems and species. The conservation focus of these federal land provisions is thus not on dividing humans from nature, but on promoting or restoring native or pre-existing conditions.

Even those legal provisions that fortify a dualism between avowed natural conditions and human activity nevertheless tolerate some human intervention on behalf of native resources. Some agency regulations governing federal Wilderness areas, for example, specifically allow the restoration of native populations and natural processes to reverse human manipulation.

2. De-Extinction With "Native" as Pre-Existing

Applying the existing definitions of "native" and "exotic" to de-extinct species, however, fails to track the potential risks and benefits of introduction. A historical preservationist definition of native could raise significant problems for the introduction of a de-extinct species. Under such a

classification, a de-extinct organism could only be considered native if it previously existed in the area. Thus, a de-extinct species might not be native to any area, even if well suited to a particular location's ecological conditions. Even if deemed to be the same as its extinct brethren, the de-extinct species could at most be considered native to areas in which such extinct brethren previously existed, regardless of its compatibility with the current biotic communities or physical conditions in those or other areas.

3. De-Extinction With "Native" as Natural

A more common approach to defining a "native" species on federal and state lands ties nativeness to the absence of human assistance or influence in a species' migration to an area. These provisions allow for the possibility that a species may be native even if it was never present historically, but only if it arrived without human assistance. Accordingly, this type of definition makes human intervention the key factor, establishing a dichotomy between human activity and "natural" movement. Under such a definition, however, any de-extinct species proposed to be introduced would almost certainly be considered exotic.

B. *De-Extinct Species as "Exotic" and "Invasive"*

I. Suppressing "Exotic" and "Invasive"

Being labeled exotic not only places a de-extinct species outside the protection of laws that seek to promote native species, but it also makes them vulnerable to being labeled invasive and subject to control or eradication. Many state and federal laws prohibit or restrict human-induced movement of exotic or invasive species without a permit. Most public land laws and policies also actively seek to impede, contain, or eliminate invasive species. Though these measures vary, virtually all seek to limit or reduce the presence of invasive species.

2. De-Extinction and Defining "Invasive"

Some jurisdictions require harmfulness for an exotic species to be subject to eradication or control by government authorities. However, other jurisdictions provide for the use of suppression management strategies for any species considered exotic. These jurisdictions assume a non-native species is by default harmful.

Importantly for de-extinction, though some federal agencies following Federal Executive Order 13,112 may not engage in active measures to control an exotic species unless harmful, many of these federal land agencies nonetheless make the deliberate introduction of an exotic species on public lands impermissible. These laws would thus inhibit the introduction of a de-extinct species anywhere it would be deemed exotic, regardless of its ecological benefits. De-extinction consequently shows how prevailing dichotomies in invasive species and public

lands laws can lead to perverse results for the management of ecological systems.

V. Rejecting Strict Dualities: A Risk Assessment Approach

A. *Native/Exotic and Nature/Human as False Dichotomies*

De-extinction illuminates the limitations of existing wildlife management laws and regulations premised on an erroneous assumption of ecological stasis. Because they are designed to keep communities as they were or used to be, historical preservation laws based on a strict native/non-native duality may not serve to promote ecological function or enhance biodiversity, but rather to inhibit it. Even if changing ecological conditions cause such preservation lands to be inhospitable to native resources, current legal native/non-native dualities will continue to direct managers to maintain native resources even at the expense of ecological function.

De-extinction exposes the limitations of a parallel dichotomy between nature and humanity. Laws proscribing active management strategies like introductions help institutionalize a dualism between humans and nature, treating untouched natural systems and undirected species migrations as intrinsically virtuous while resources subject to active human management are artifactual and thus *per se* of diminished value.

However, it is evident nature is increasingly indivisible from human activity, assuming it ever was separable. The substantial and widespread ecological effect of humanity has been discernible, and growing, for decades, most pervasively with anthropogenic climate change. With many scientists dubbing the current ecological era the “anthropocene,” ecology has come to view the natural and human worlds as substantially interrelated. So closely intertwined have these two spheres become that they resemble a synthesis more than a dualism.

Establishing a rigid legal dualism between the wild and artifactual can lead to perverse results, as it has in the Wilderness Act, and undermine sound conservation policy. As exemplified through the lens of de-extinction, making the fundamental ecological goal minimizing human influence on ecological resources necessarily obstructs active management measures (such as the introduction of a species) even if they were likely to improve ecological function. Likewise, ignoring the effects of unassisted wildlife migrations as seemingly natural, without inquiry into such a migration’s potential benefits and harms, raises significant risks of ecological degradation.

B. *Risk-Based Adaptive Ecosystem Management*

Sound de-extinction policy, and wildlife management laws in general, should reflect the dynamic and human-influenced character of modern ecosystems. Laws managing

whether to encourage, allow, restrict, or prohibit the establishment or introduction of biota, de-extinct or otherwise, should focus the inquiry on whether the management strategy (as compared to alternative strategies) will promote ecological health in light of current and reasonably foreseeable ecological conditions.

I. Risk Assessment and Adaptive Management

A sensible risk-based approach should incorporate into relevant wildlife management laws both (1) a provisional assessment of the risks and benefits for an introduction and (2) adaptive management that incorporates a framework for periodic monitoring and adjustment of such provisional decisions to account for new information and changes in conditions. Furthermore, any permitted introduction should be required to include concrete measures that seek to minimize the negative and maximize the positive consequences of the strategy, as determined by the initial risk assessment. Because of the considerable uncertainty involved in such a determination, such risk assessments always should be treated as provisional and accompanied by thorough adaptive management measures that mandate sustained and concrete monitoring, reexamination, and periodic adjustment procedures. Such a program should include sufficient resources and incentives for managers to reduce uncertainty and adjust decisions over time.

The inquiry proposed herein would thus seek to focus on promoting ecological health as the central goal, rather than an analysis that might emphasize broader consumptive, economic, aesthetic, or historical preservation considerations. This framework would be a significant departure from a reliance on strict dualist treatments of ecological resources that bifurcate management options according to whether or not a species is deemed native, or whether or not it is an artifact of human intervention.

The most prominent regulatory approach rejecting a strict duality between natural and human-engineered products is embedded in the Coordinated Framework for the Regulation of Biotechnology Products (Coordinated Framework), the principal policy framework for synchronizing federal oversight of commercial biotechnology processes and products in the U.S. Under the Coordinated Framework, determinations of whether to regulate are based on the product’s particular characteristics and expected environmental and health effects. The Coordinated Framework expressly states that such assessments (including decisions on whether to restrict a planned introduction of a product) should not be grounded in the methods used to produce them, but rather in the potential risks and advantages posed. In this sense, the Coordinated Framework similarly rejects a duality between human-engineered and conventional or natural products. It purports to subject commercial biotechnology processes and products to the same regulatory regime as more conventional commercial processes and products, ostensibly focusing on the potential advantages and disadvantages of regulation. The Coordinated Framework

undoubtedly has been the subject of various credible criticisms, including that it relies on a fragmented and inefficient regulatory patchwork, perpetuates yet another overly formalistic dualism between products and processes, and has resulted in regulatory passivity. It also is only limited to the regulation of commercial biotechnology processes and products, and fails to incorporate any of the essential adaptive management protocols proposed herein. Even so, in a limited way the Coordinated Framework serves as an important example of how the valuation of a potentially risky activity need not turn on a binary choice but can be based rather on a more detailed analysis of potential merits and risks.

2. Potential Default Rebuttable Presumptions

Of course, rejecting dependence on rigid categories such as native and exotic or natural and artificial for wildlife management leaves open the question of whether default presumptions in favor of unassisted or preexisting wildlife remain valuable. Though this Article's risk-based adaptive approach rejects a reliance on rigid native-exotic dualities, whether members of a species currently exist or previously existed in an area nonetheless will frequently be very relevant to an assessment of the potential risks and benefits of an introduction. Past and current conditions are likely to be invaluable in determinations of what might advance ecological health, and there is undoubtedly more uncertainty about ecological costs and benefits if an organism has never before been present in a particular location. Accordingly, such factors might give rise to rebuttable default presumptions in favor of native introductions. Conversely, an introduction of a species that is not native to an area might be barred unless assessed to be compatible with current conditions.

While most legal provisions regulating wildlife management in the United States are grounded in promoting a strict native/non-native duality, a few provisions do provide useful examples of how exotic species might be integrated into land management regimes under a rebuttable presumption in favor of native species. For instance, the FWS has adopted a default presumption against the introduction of non-native plants on Federal Wildlife Refuges unless it determines there is no feasible alternative. The BLM similarly is considering the adoption of a policy that establishes a default rebuttable presumption for the introduction of native plants and against non-native plant species.

A similar default rebuttable presumption could be developed that tracks the human/natural duality, though the

argument for such a presumption is appreciably weaker. A regulatory framework could presume that ecological shifts are valuable if not the direct consequence of human activity. Correspondingly, it could presume that alterations to an ecosystem are harmful if directly the result of human action, such as an introduction.

However, in light of the pervasive influence of humans in reserved lands and the biosphere more generally, the intrinsic benefit of minimizing additional human interaction with what are already disturbed or "unnatural" biotic communities is more suspect. Moreover, ecological harms in protected areas absent direct human intervention are expected to increase for the foreseeable future as a result of global climate change. As such, the costs of inaction are likely to increase and the benefits of active measures (whether barring or inducing the movement of species) are likely to increase. There often will be substantial reasons to minimize human-induced effects on ecological systems. However, a presumption against active strategies will frequently not be preferable to a detailed risk assessment that neither favors nor disfavors direct or indirect human interventions.

VI. Conclusion

As an examination of their applicability to de-extinction makes clear, the dominant reliance in wildlife laws on dualist treatments of ecological resources distorts conservation management. Though nativity or human involvement may be relevant in assessing a resource's current ecological value or a management strategy's likely feasibility, neither should be the primary focus of conservation policy. De-extinction reinforces the need to reformulate legal frameworks for assessing new biotechnological and resource management strategies to make careful risk assessment and adaptive management their foundation.

Undoubtedly, making the promotion of ecological health the goal of such an assessment raises significant uncertainties, and the relative value of the various current and potential constituents of an ecological community is quite contestable. Reducing and managing these uncertainties, and developing processes and tools for assessing value, should be the primary focus of ecology, conservation management, and natural resources laws. By proposing a reorientation toward adaptive risk assessment and management, this Article seeks to push conservation laws to make assessments and deliberations about the relative value of ecological constituents the central enterprise.

H O N O R A B L E M E N T I O N

Cost-Benefit Analysis as a Commitment Device

by Matthew Wansley

Matthew Wansley is the Climenko Fellow and Lecturer in Law, Harvard Law School.

I. Introduction

Cost-benefit analysis purports to calibrate regulation. But the way administrative agencies practice cost-benefit analysis can, at best, calibrate a rule at the moment of its promulgation. As scientific knowledge of regulated health, safety, and environmental risks accumulates—and as technology becomes more affordable—the assumptions underlying a rule’s cost-benefit analysis can rapidly obsolesce. Because of the structural incentives towards agency inaction, pressure from regulated firms, or attention to other priorities, outdated rules persist.

The problem is what I call snapshot cost-benefit analysis: the administrative state’s practice of treating regulation as a one-off game by neglecting to adapt a rule when the best estimate of costs and benefits has changed.

Cost-benefit analysis need not work this way. For many regulations, cost-benefit analysis could be used as a commitment device. When an agency analyzes a proposed rule, it should explicitly anticipate the adoption of a more stringent rule than the one it promulgates. The agency should then precommit to adopting the more stringent rule when a credible demonstration has been made that it has become cost-benefit justified. Just as the expected costs and benefits of a rule determine its initial level of stringency, the observed costs and benefits of a rule should determine when and how it is updated.

In addition to selecting a rule to be promulgated, the regulatory agency would anticipate and precommit to a second, more stringent rule, one that prohibited exposure at levels permitted under the rule to be promulgated. The agency would then specify how a private actor could trigger a reanalysis by credibly demonstrating that its innovation—like unleaded gasoline, lead-free paint, or lead-abatement technology—could bring the cost of compliance down to justify the more stringent rule.

The full version of this Article was originally published as: Matthew Wansley, Cost-Benefit Analysis as a Commitment Device, 37 TEMP. L. REV. 447 (2015). It has been excerpted and updated with permission of Temple Law Review and Matthew Wansley. Please see the full article for footnotes and sources.

Cost-benefit analysis as a commitment device could help agencies and administrations set priorities better. Administrations could set a standard figure for the difference in expected benefits (DEB) between promulgated and anticipated rules for agencies to use in setting anticipated rules. If every rule were set using the same DEB, the expected costs and benefits of updating each rule would drive when that rule was reanalyzed and revised.

The commitment device would push the administrative state past retrospective analysis. While retrospective analysis defers to agency discretion in implementation, the commitment device directly addresses the problems of rulemaking ossification and agency inaction.

II. The Problem of Obsolete Rules

Administrative regulation, because of its specificity, is especially brittle. The current system of administrative rule-making in the United States exacerbates this brittleness in two ways. First, regulated firms have taken advantage of its procedural protections to ossify the rulemaking process. Second, there is a structural bias towards agency inaction because courts aggressively scrutinize newly promulgated rules and rarely and deferentially review failures to promulgate rules.

Regulated firms use the threat of judicial challenge to impede the progress of rules they disfavor. The APA provides that courts shall “hold unlawful and set aside agency action, findings, and conclusions found to be . . . arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law,” among other biases. So even if regulated firms are not able to halt agency action altogether, they can often profit from delay.

As a result of the threat of judicial review, “[t]he key to successful rulemaking is therefore to make every effort to render the rule capable of withstanding the most strenuous possible judicial scrutiny the first time around.”

A separate, but related, problem of agency inaction results from an asymmetry in the incentives judicial review creates for agencies. Since *Heckler v. Chaney*, the Supreme Court has generally interpreted the relevant provisions of the APA to mean that agency inaction is

nonreviewable. The Court has also interpreted standing doctrine to preclude most possibilities for judicial review of agency inaction.

After Heckler, it was not clear whether agency decisions that denied petitions for rulemaking were reviewable. In 2007, the Supreme Court resolved the question in *Massachusetts v. EPA*, in which a 5-4 majority held that the EPA had failed to justify its denial of a petition for rulemaking on greenhouse gases. So denials of petitions for rulemaking—“a category of agency decision making that once enjoyed all the benefits of ‘inaction’—will now be ‘treated as if it were ‘action’ and subjected to review.”

Massachusetts v. EPA was an exceptional case. In its aftermath, agencies still face less pressure to avoid inaction, and they are reluctant to begin—or reopen—controversial rulemakings and face onerous judicial review.

Taken together, the rulemaking ossification and agency inaction problems have locked many regulations into technological obsolescence. Using cost-benefit analysis as a commitment device is a strategy for remedying regulatory obsolescence.

III. Cost-Benefit Analysis as a Commitment Device

The commitment device works in three steps. First, an agency conducts an initial analysis with explicit anticipation of a future, more stringent rule and conditions under which reanalysis would be triggered. Second, a private actor credibly demonstrates that it has satisfied the conditions required to trigger the reanalysis. Third, the agency conducts a narrow reanalysis in which the earlier cost and benefit predictions serve as presumptions subject to rebuttal based on the new information. If the new rule has become justified, the agency promulgates it and in turn precommits to a subsequent rule to replace it, if and when an even more demanding trigger is satisfied in the future.

A. Anticipatory Analysis

Anticipatory analysis would start like conventional snapshot analysis. Agencies would acquire information about the expected harm of the risk to be regulated, the potential means to regulate those harms, and the foreseeable effects of the proposed rulemaking, both intended and unintended. They would then select a rule for which the benefits justified the costs.

Anticipatory analysis would differ from snapshot analysis in that the agency would explicitly consider and ultimately select a second, more stringent rule that could be triggered in the future. Some cost-benefit analyses already resemble anticipatory analysis in that an agency does not just conduct an evaluation of one particular rule, but considers multiple alternative rules or multiple levels of strin-

gency for a particular rule. In such a case, all anticipatory analysis would change is that one rule that might “lose” under snapshot cost-benefit analysis would be given an explicit promise of a second shot later.

The critical difference with anticipatory analysis is that the stringency of anticipated rules would be set using the DEB—the administration-wide figure for the difference in expected benefits between each promulgated rule and the anticipated rule the agency would announce simultaneously to it.

Here is how the DEB would work. Imagine a rule that would set the permissible level of emission of a pollutant at 10 units. The rule would have expected benefits of \$200 million, and, because it emerged from cost-benefit analysis, costs at or below that amount. Now assume the administration had set a DEB figure of \$100 million. The agency would set the anticipated rule at whatever level of emission generated expected benefits of \$300 million, a difference of \$100 million from the \$200 million of the promulgated rule. Suppose that the agency predicted that a rule set at 5 units, based on its calculations of the risk created by different levels of exposure to the pollutant, would generate benefits of \$300 million. The 5-unit rule would, by definition, not be cost-benefit justified at the time of the analysis that led to the 10-unit rule. But a private actor would be able to trigger the reanalysis that led to the rule when it could credibly demonstrate that a technological innovation had brought the expected cost of the 5-unit rule below \$300 million.

If each agency sets its anticipated rules using the administration-wide DEB, how frequently an agency updates a particular rule will be partially determined by the benefits the agency should expect the updated rule to achieve. Agencies will be implicitly allocating their time and resources where expected regulatory benefits warrant them. If an administration likewise allocates its resources to agencies in part based on how frequently agencies reanalyze and update their rules, the administration will similarly be implicitly setting regulatory priorities through the DEB, the metric of expected regulatory benefits. Because rules will only be updated if the more stringent version passes the cost-benefit test, the commitment device should lead to increased net regulatory benefits.

B. Triggering a Reanalysis

To trigger a new analysis, a party would need to make a credible demonstration that the conditions for the trigger had been satisfied. In many cases, this would be straightforward. An innovator could simply show that its new technology achieved the specified reduction in risk and commit to market it for a certain cost. The new rule would not necessarily require the particular technology that the party seeking to trigger the new analysis has devised. It

will only require that regulated firms find some means of achieving the reduction in the relevant risk.

In addition to being partially automatic, cost-benefit analysis as a commitment device differs from retrospective analysis in that its pace is set by technological development rather than a calendar. Rates of change in risk-creating and risk-mitigating technologies differ across industries, so we should expect variation in when new rules become cost-benefit justified. Some rules will not need the periodic review of retrospective analysis, and some will need more rapid revision. The trigger mechanism allows actors who have the knowledge about technological change relevant to the particular rule to set the schedule for reanalysis.

C. *Conducting a Reanalysis*

One advantage of the commitment device is its automaticity. Agencies would be forced to act once a credible demonstration has been made that the anticipated rule has become cost-benefit justified. But there are dangers in making the adoption of revised rules too automatic. Agencies need not only account for technological change; they need to respond to informational change as well. The other inputs to an initial cost-benefit analysis—assumptions about the likelihood and magnitude of harms a risk creates, the costs of compliance with the initial rule, and the unintended effects of the regulation, foreseen or not—may have changed by the time a reanalysis is triggered. For the commitment device to work properly, agencies must select a level of automaticity that suffices to create incentives for private actors, but does not bind them to making future decisions that are not cost-benefit justified. Sometimes new information will illuminate an increase in the cost of the regulation or a decrease in its expected benefits that will erase the cost savings of the technology that triggered the reanalysis. For example, new evidence may suggest that the dose-response curve differed from the initial prediction or that the cost of compliance with the initial regulation may have been greater than anticipated. Those cost increases might affect the anticipated rule as well. It is also conceivable that changes in other relevant technologies will have made the regulation more costly. For example, a cost shock to a raw material used in production processes will have made production more expensive. The subsequent cost-benefit analysis must be sensitive to these changes.

So a new analysis will not always result in the adoption of the anticipated rule. It is possible that the existing rule might be maintained, that an even more stringent rule might be justified, or that a rule even less stringent than the initial rule should be adopted. But, on reasonable assumptions, one should expect rules to gradually become more stringent. Risk-mitigating technologies rarely become more costly over time, and even though science continually discovers more associations between industrial activities and harms to our health and the environment, the overall level of background risk is decreasing.

Whether a new analysis results in adoption of the anticipated, more stringent rule or not, the new analysis will be more narrowly focused than the initial analysis. The agency will take the cost and benefit predictions of the initial analysis as presumptions and modify its assessment of the costs and benefits based only on newly presented information and without reconsidering any issues settled in the first analysis for which new information has not been offered. The new analysis should economize on agency time and attention and reduce the costs of participation.

IV. **Fixing Failures in the Market for Innovation**

Under snapshot cost-benefit analysis, economic theory predicts that firms will oppose regulation to the extent they can and will comply with regulation as minimally as they can. The commitment device seeks to change that relationship by co-opting market forces to further regulatory goals.

A. *Incentives for Existing Firms*

The commitment device gives any particular firm in an industry that creates a regulated risk a competitive incentive to innovate in a less risk-creating production process or directly in risk-mitigating technology.

The first firm to implement a less risk-creating production process or develop a new risk-mitigating technology that would satisfy the conditions to trigger a new analysis would achieve a considerable first-mover advantage over its competitors, sometimes significant enough to justify the investment in research and development.

If the competitor firms sought to adopt the innovating firm's risk-mitigating technology or mimic its production process, the innovating firm would gain a new source of revenue in licensing its patented technology to competitors.

In other words, the commitment device allows firms to cash out on the ways in which they are more able to prevent risks to health, safety, and the environment, thereby giving them an incentive to develop those advantages and trigger a new analysis.

B. *Incentives to Anticipate Regulation*

The partially automatic nature of the commitment device also creates the potential that firms might voluntarily comply with the more stringent anticipated rule before the new rule comes into effect. Some law and economics researchers predict that “changes in government policy—or, more generally, changes in the prospects for reforms—will affect the value of investments made prior to those changes to the extent that such changes were not fully anticipated.” Therefore, if the chance of successfully fighting or even significantly delaying the regulation is low, it might be less costly for regulated firms to comply voluntarily and not waste the time and money.

V. Deossifying the Rulemaking Process

Implementing cost-benefit analysis as a commitment device would require that agencies conduct more rulemakings on preexisting rules. But the commitment device would combat rulemaking ossification—or at least aim to avoid exacerbating it—by changing how the politics of the rulemaking process works in four ways. First, because of the new economic incentives the commitment device would create for firms that stood to gain from more stringent rules, it would sometimes break the coalition of firms opposed to more stringent regulation. Second, it would dampen the ideological passions of rulemaking by shifting the focus of the analysis to factual predictions. Third, the iterative nature of reanalysis would provide a record of the accuracy of the predictions of parties to the rulemaking, and in the long run, reward credibility. Fourth and finally, the commitment device would lower the stakes of each particular rulemaking—if a party thinks the agency genuinely erred in its cost and benefit calculations, it could patiently wait to be vindicated or subsidize market efforts to expedite the day of its vindication.

Taken together, these changes could make rulemakings under a commitment device regime less contentious and more productive, even in the absence of reforms to the APA's procedural mandates or hard look judicial review.

VI. Setting Agency and Administration Priorities

Regulatory reformers have repeatedly criticized the administrative state for setting priorities badly or neglecting to set priorities at all. Using cost-benefit analysis as a commitment device should generally guide regulatory priority setting.

The commitment device would set agency and administration priorities through the DEB. It would change existing practice in three ways. First, it would require greater uniformity in cost-benefit analysis across agencies—setting a consistent DEB for reanalyses across agencies requires a minimum consistency in the other numbers agencies use in assessing costs and benefits. Second, it would curtail discretion both at the agency and administration level; private actors would be compelling reanalyses, and agencies would not be able to defer them. Third, and most importantly, it would prioritize the reanalysis of already existing rules over potential rules and thus prioritize already regulated risks over as-yet unregulated risks.

A. *The Case for More Standardized Analyses*

Any difference in how agencies conduct cost-benefit analysis can skew the relative stringency of their rules, and how frequently agencies update their rules can have a parallel effect. The commitment device solves this problem by mandating that cost-benefit analysis dictate when rules are

updated and that agencies use the same DEB in setting their anticipated rules.

B. *The Case for More Automatic Priority Setting*

The commitment device sets priorities automatically and affects administration priority setting in a different way than agency priority setting. Agencies would be compelled to allocate more time and resources to reanalyzing existing rules. The effect on administration priorities is more indirect. Some agencies would submit more updated rules to OIRA, and some agencies would be able to make a better case to the central administration or to Congress for a larger budget and staff. But whether the administration actually acted on those submissions and requests would still be partially discretionary.

Administrations should honor those shifts in priorities. To do otherwise would leave some agencies overburdened with demands for reanalyses and ultimately might undermine the smooth functioning of the commitment device.

C. *The Case for More Attention to Already Regulated Risks*

The commitment device would not only change how agencies and administrations set priorities, but also change the substance of those priorities by compelling agencies to spend more time and resources reanalyzing existing rules. Some experts worry that regulatory agencies already consume too much time and too many resources with existing rules, yet the commitment device would prioritize already regulated risks at the expense of as-yet unregulated risks.

Reanalyses would be limited to processing new information, guided by the presumptions that initial rulemakings set. Initial rulemakings would involve the new element of anticipatory rulemaking, but they would also have lower stakes because of the possibility of updating. To the extent that the option of updating rules reduced the incentive for frustrated parties to seek judicial challenges, it might economize on agency resources.

Thus, the reallocation of resources away from unregulated risks might not be as costly as it initially appears. To the extent that agencies and even administrations are shying away from updating existing rules because of the disproportionate influence of entrenched regulated firms, the commitment device may aid legitimate regulatory goals that would otherwise be thwarted.

The most interesting defense of the shift in priorities is more speculative: the regulatory state has already gone after the big killers. In other words, there is some correlation between the magnitude of threat that risks pose—and, more tenuously, our ability to combat those risks in a cost-benefit justified way through regulation—and the likelihood that Congress will legislate or agencies will regulate. Myriad sources of risk cause cancer, but few are as staggering as tobacco, asbestos,

and lead. Therefore, these risks were more easily observable, and early, less sophisticated epidemiological studies could clearly isolate their effects.

VII. Conclusion

In earlier-generation debates about cost-benefit analysis, proponents of cost-benefit analysis repeated a simple argument: agencies need to have some method for deciding whether and how stringently risks should be regulated. Critics of cost-benefit analysis never converged on a satisfactory competitor, but their repeated slogan—that cost-benefit analysis means deregulation—continues to

resonate. The reason cost-benefit analysis has mostly served to constrain regulation is because administrations and agencies use cost-benefit analysis to calibrate regulation. But snapshot calibration can only constrain, rather than compel, regulation.

Cost-benefit analysis need not be used this way. Using cost-benefit analysis as a commitment device is one possible way that agencies and administrations could use cost-benefit analysis to gradually reduce risks to health, safety, and the environment. Whether the benefits of the commitment device will outweigh its costs can only be determined over time.

RECENT DEVELOPMENTS

In the Congress

“In the Congress” entries cover activities reported in the *Congressional Record* from June 1, 2016, through June 30, 2016. Entries are arranged by bill number, with Senate bills listed first. “In the Congress” covers all environment-related bills that are introduced, reported out of committee, passed by either house, or signed by the president. “In the Congress” also covers all environmental treaties ratified by the Senate. This material is updated monthly. For archived materials, visit <http://elr.info/legislative/congressional-update/archive>.

Public Laws

S. 2276 (natural resources), which would amend Title 49, U.S. Code, to provide enhanced safety in pipeline transportation, was signed into law by President Obama on June 22, 2016. 162 Cong. Rec. D716, Pub. L. No. 114-183 (daily ed. June 27, 2016).

H.R. 812 (land use), which would provide for Native American trust asset management reform, was signed into law by President Obama on June 22, 2016. 162 Cong. Rec. D716, Pub. L. No. 114-178 (daily ed. June 27, 2016).

H.R. 2212 (land use), which would take certain federal lands located in Lassen County, California, into trust for the benefit of the Susanville Indian Rancheria, was signed into law by President Obama on June 22, 2016. 162 Cong. Rec. D716, Pub. L. No. 114-181 (daily ed. June 27, 2016).

H.R. 2576 (toxic substances), which would modernize TSCA, was signed into law by President Obama on June 22, 2016. 162 Cong. Rec. D716, Pub. L. No. 114-182 (daily ed. June 27, 2016).

Chamber Action

S. 1479 (waste), which would amend CERCLA to modify provisions relating to grants, was passed by the Senate. 162 Cong. Rec. S4585 (daily ed. June 27, 2016).

S. 2276 (energy), which would amend Title 49, U.S. Code, to provide en-

hanced safety in pipeline transportation, was passed by the House. 162 Cong. Rec. H3538 (daily ed. June 8, 2016).

H.R. 812 (land use), which would provide for Native American trust asset management reform, was passed by the Senate. 162 Cong. Rec. S3812 (daily ed. June 10, 2016).

H.R. 2212 (land use), which would take certain federal lands located in Lassen County, California, into trust for the benefit of the Susanville Indian Rancheria, was passed by the Senate. 162 Cong. Rec. S3812 (daily ed. June 10, 2016).

H.R. 3826 (land use), which would amend the Omnibus Public Land Management Act of 2009 to modify provisions relating to certain land exchanges in the Mt. Hood Wilderness in the state of Oregon, was passed by the House. 162 Cong. Rec. H3517 (daily ed. June 8, 2016).

H.R. 4775 (air), which would facilitate efficient state implementation of ground-level ozone standards, was passed by the House. 162 Cong. Rec. H3517 (daily ed. June 8, 2016).

H. Con. Res. 89 (climate change), which would express the sense of Congress that a carbon tax would be detrimental to the U.S. economy, was passed by the House. 162 Cong. Rec. H3669 (daily ed. June 10, 2016).

H. Con. Res. 112 (natural resources), which would express the opposition of Congress to the president’s proposed \$10 tax on every barrel of oil, was

passed by the House. 162 Cong. Rec. H3677 (daily ed. June 10, 2016).

Committee Action

S. 1479 (waste) was reported by the Committee on Environment and Public Works. S. Rep. No. 114-276, 162 Cong. Rec. S3860 (daily ed. June 14, 2016). The bill would amend CERCLA to modify provisions relating to grants.

S. 1935 (land use) was reported by the Committee on Commerce, Science, and Transportation. S. Rep. No. 114-272, 162 Cong. Rec. S3645 (daily ed. June 8, 2016). The bill would require the Secretary of Commerce to undertake certain activities to support waterfront community revitalization and resiliency.

S. 2795 (energy) was reported by the Committee on Environment and Public Works. S. Rep. No. 114-285, 162 Cong. Rec. S4550 (daily ed. June 23, 2016). The bill would modernize the regulation of nuclear energy.

S. 2816 (air) was reported by the Committee on Environment and Public Works. S. Rep. No. 114-284, 162 Cong. Rec. S4410 (daily ed. June 21, 2016). The bill would reauthorize the diesel emissions reduction program.

S. 2848 (water) was reported by the Committee on Environment and Public Works. S. Rep. No. 114-283, 162 Cong. Rec. S4359 (daily ed. June 20, 2016). The bill would provide for the conservation and development of water and related resources and authorize the Sec-

retary of the Army to construct various projects for improvements to rivers and harbors of the United States.

S. 3068 (governance) was reported by the Committee on Appropriations. S. Rep. No. 114-281, 162 Cong. Rec. S4299 (daily ed. June 16, 2016). The bill would make appropriations for DOI, environment, and related agencies for the fiscal year ending September 30, 2017.

H.R. 4582 (wildlife) was reported by the Committee on Natural Resources. H. Rep. No. 114-647, 162 Cong. Rec. H4185 (daily ed. June 28, 2016). The bill would exclude striped bass from the anadromous fish-doubling requirement in §3406(b)(1) of the Central Valley Project Improvement Act.

H.R. 4775 (air) was reported by the Committee on Energy and Commerce. H. Rep. No. 114-598, pt. 2, 162 Cong. Rec. H3505 (daily ed. June 7, 2016). The bill would facilitate efficient state implementation of ground-level ozone standards.

H.R. 5050 (natural resources) was reported by the Committee on Energy and Commerce. H. Rep. No. 114-617, pt. 1, 162 Cong. Rec. H3703 (daily ed. June 10, 2016). The bill would amend Title 49, U.S. Code, to provide enhanced safety in pipeline transportation.

H.R. 5538 (governance) was reported by the Committee on Appropriations. H. Rep. No. 114-632, 162 Cong. Rec. S4410 (daily ed. June 21, 2016). The bill would make appropriations for DOI, environment, and related agencies for the fiscal year ending September 30, 2017.

H. Res. 767 (air) was reported by the Committee on Rules. H. Rep. No. 114-607, 162 Cong. Rec. H3505 (daily ed. June 7, 2016). The resolution would provide for consideration of the bill H.R. 4775 to facilitate efficient state implementation of ground-level ozone standards; the concurrent resolution H. Con. Res. 89 expressing the sense of Congress that a carbon tax would be detrimental to the U.S. economy; and the concurrent resolution H. Con. Res. 112 expressing the sense of Congress

opposing the president's proposed \$10 tax on every barrel of oil.

Bills Introduced

S. 3022 (Whitehouse, D-R.I.) (land use) would designate certain National Forest System land and certain public land under the jurisdiction of the Secretary of the Interior in the states of Idaho, Montana, Oregon, Washington, and Wyoming as wilderness, wild and scenic rivers, wildland recovery areas, and biological connecting corridors. 162 Cong. Rec. S3411 (daily ed. June 6, 2016). The bill was referred to the Committee on Energy and Natural Resources.

S. 3027 (King, I-Me.) (land use) would clarify the boundary of Acadia National Park. 162 Cong. Rec. S3540 (daily ed. June 7, 2016). The bill was referred to the Committee on Energy and Natural Resources.

S. 3028 (Cantwell, D-Wash.) (land use) would redesignate the Olympic Wilderness as the Daniel J. Evans Wilderness. 162 Cong. Rec. S3540 (daily ed. June 7, 2016). The bill was referred to the Committee on Energy and Natural Resources.

S. 3036 (Markey, D-Mass.) (energy) would amend the Internal Revenue Code of 1986 to provide for an investment tax credit related to the production of electricity from offshore wind. 162 Cong. Rec. S3646 (daily ed. June 8, 2016). The bill was referred to the Committee on Finance.

S. 3038 (Nelson, D-Fla.) (land use) would reauthorize the Coastal Zone Management Act of 1972. 162 Cong. Rec. S3646 (daily ed. June 8, 2016). The bill was referred to the Committee on Commerce, Science, and Transportation.

S. 3048 (Wyden, D-Or.) (land use) would withdraw certain federal land located in Malheur County, Oregon, from all forms of entry, appropriation, or disposal under public land laws; location, entry, and patent under mining laws; and operation under mineral leasing laws, to provide for the conduct of certain economic activities in Malheur

County. 162 Cong. Rec. S3795 (daily ed. June 10, 2016). The bill was referred to the Committee on Agriculture, Nutrition, and Forestry.

S. 3049 (Udall, D-N.M.) (land use) would designate the Organ Mountains and other public land as components of the National Wilderness Preservation System in the state of New Mexico. 162 Cong. Rec. S3795 (daily ed. June 10, 2016). The bill was referred to the Committee on Energy and Natural Resources.

S. 3054 (Cochran, R-Miss.) (land use) would require the Secretary of the Interior to conduct a special resource study of significant civil rights sites. 162 Cong. Rec. S3860 (daily ed. June 14, 2016). The bill was referred to the Committee on Energy and Natural Resources.

S. 3059 (Cantwell, D-Wash.) (wildlife) would reauthorize and amend the John H. Prescott Marine Mammal Rescue and Response Grant Program. 162 Cong. Rec. S3984 (daily ed. June 15, 2016). The bill was referred to the Committee on Commerce, Science, and Transportation.

S. 3062 (Klobuchar, D-Minn.) (energy) would require the Federal Trade Commission to consider including smart grid capability on Energy Guide labels for products. 162 Cong. Rec. S3984 (daily ed. June 15, 2016). The bill was referred to the Committee on Energy and Natural Resources.

S. 3066 (Cantwell, D-Wash.) (natural resources) would protect taxpayers from liability associated with the reclamation of surface coal mining operations. 162 Cong. Rec. S4299 (daily ed. June 16, 2016). The bill was referred to the Committee on Energy and Natural Resources.

S. 3074 (Markey, D-Mass.) (climate change) would authorize NOAA to establish a Climate Change Education Program. 162 Cong. Rec. S4299 (daily ed. June 16, 2016). The bill was referred to the Committee on Commerce, Science, and Transportation.

S. 3079 (Tester, D-Mont.) (natural resources) would seek to improve the

management of the federal coal leasing program. 162 Cong. Rec. S4410 (daily ed. June 21, 2016). The bill was referred to the Committee on Energy and Natural Resources.

S. 3080 (Feinstein, D-Cal.) (land use) would direct the Secretary of the Interior to convey certain public lands in San Bernardino County, California, to the San Bernardino Valley Water Conservation District, and to accept in return certain exchanged non-public lands. 162 Cong. Rec. S4410 (daily ed. June 21, 2016). The bill was referred to the Committee on Energy and Natural Resources.

S. 3085 (Roberts, R-Kan.) (land use) would seek to improve forest management activities on National Forest System land and public land. 162 Cong. Rec. S4472 (daily ed. June 22, 2016). The bill was referred to the Committee on Agriculture, Nutrition, and Forestry.

S. 3086 (Booker, D-N.J.) (water) would reauthorize and amend the Marine Debris Act to promote international action to reduce marine debris. 162 Cong. Rec. S4472 (daily ed. June 22, 2016). The bill was referred to the Committee on Commerce, Science, and Transportation.

S. 3087 (Sullivan, R-Ark.) (wildlife) would establish the American Fisheries Advisory Committee to assist in the awarding of fisheries research and development grants. 162 Cong. Rec. S4472 (daily ed. June 22, 2016). The bill was referred to the Committee on Commerce, Science, and Transportation.

S. 3095 (Booker, D-N.J.) (wildlife) would prohibit the sale of shark fins. 162 Cong. Rec. S4550 (daily ed. June 23, 2016). The bill was referred to the Committee on Commerce, Science, and Transportation.

S. 3098 (Sullivan, R-Ark.) (land use) would remove reversionary clauses on property owned by the municipality of Anchorage, Alaska. 162 Cong. Rec. S4550 (daily ed. June 23, 2016). The bill was referred to the Committee on Energy and Natural Resources.

S. 3099 (Nelson, D-Fla.) (wildlife) would preserve and enhance saltwater

fishing opportunities for recreational anglers. 162 Cong. Rec. S4550 (daily ed. June 23, 2016). The bill was referred to the Committee on Commerce, Science, and Transportation.

S. 3102 (Heller, R-Nev.) (land use) would promote conservation, improve public land management, and provide for sensible development in Pershing County, Nevada. 162 Cong. Rec. S4641 (daily ed. June 28, 2016). The bill was referred to the Committee on Energy and Natural Resources.

S. 3103 (Scott, R-S.C.) (land use) would establish Fort Sumter and Fort Moultrie National Park in the state of South Carolina. 162 Cong. Rec. S4641 (daily ed. June 28, 2016). The bill was referred to the Committee on Energy and Natural Resources.

S. 3108 (Blumenthal, D-Conn.) (natural resources) would decrease the incidence of food waste. 162 Cong. Rec. S4723 (daily ed. June 29, 2016). The bill was referred to the Committee on Agriculture, Nutrition, and Forestry.

S. 3110 (Cassidy, R-La.) (water) would reform the administration of the outer continental shelf of the United States to provide for the development of geothermal, solar, and wind energy on public land. 162 Cong. Rec. S4723 (daily ed. June 29, 2016). The bill was read for the first time.

S. 3121 (Whitehouse, D-R.I.) (water) would require the Secretary of the Army to carry out a comprehensive assessment and management plan to restore aquatic ecosystems in the North Atlantic coast region. 162 Cong. Rec. S4723 (daily ed. June 29, 2016). The bill was referred to the Committee on Environment and Public Works.

H.R. 5379 (Grijalva, D-Ariz.) (land use) would prescribe procedures for effective consultation and coordination by federal agencies with federally recognized Native American tribes regarding federal government activities that impact tribal lands and interests to ensure that meaningful tribal input is an integral part of the federal decisionmaking process. 162 Cong. Rec. H3462 (daily ed. June 3, 2016). The

bill was referred to the Committee on Natural Resources.

H.R. 5440 (Rice, R-S.C.) (energy) would amend the Internal Revenue Code of 1986 to allow certain regulated companies to elect out of the public utility property energy investment tax credit limitation in the case of solar energy property. 162 Cong. Rec. H3663 (daily ed. June 9, 2016). The bill was referred to the Committee on Ways and Means.

H.R. 5451 (Kuster, D-N.H.) (land use) would amend the Food Security Act of 1985 to exempt certain recipients of USDA conservation assistance from certain reporting requirements. 162 Cong. Rec. H3703 (daily ed. June 10, 2016). The bill was referred to the Committee on Agriculture and the Committee on Oversight and Government Reform.

H.R. 5457 (Hice, R-Ga.) (land use) would redesignate Gravelly Point Park, located along the George Washington Memorial Parkway in Arlington County, Virginia, as the Nancy Reagan Memorial Park. 162 Cong. Rec. H3753 (daily ed. June 13, 2016). The bill was referred to the Committee on Natural Resources.

H.R. 5464 (Poliquin, R-Me.) (energy) would provide that certain project works on the St. Croix River, Maine, are not required to be licensed by FERC. 162 Cong. Rec. H3753 (daily ed. June 13, 2016). The bill was referred to the Committee on Energy and Commerce.

H.R. 5467 (Schiff, D-Cal.) (land use) would adjust the boundary of the Santa Monica Mountains National Recreation Area to include the Rim of the Valley Corridor. 162 Cong. Rec. H3815 (daily ed. June 14, 2016). The bill was referred to the Committee on Natural Resources.

H.R. 5468 (Bishop, R-Utah) (water) would direct the Secretary of the Interior to allow for prepayment of repayment obligations under repayment contracts between the United States and the Weber Basin Water Conservancy District. 162 Cong. Rec. H3815 (daily ed. June 14, 2016).

The bill was referred to the Committee on Natural Resources.

H.R. 5478 (Lujan, D-N.M.) (water) would improve the implementation of the settlement agreement reached between the Pueblo de Cochiti of New Mexico and the U.S. Army Corps of Engineers. 162 Cong. Rec. H3815 (daily ed. June 14, 2016). The bill was referred to the Committee on Natural Resources and the Committee on Transportation and Infrastructure.

H.R. 5483 (Newhouse, R-Wash.) (energy) would extend the deadline for commencement of construction of a hydroelectric project (FERC Project 12569). 162 Cong. Rec. H3913 (daily ed. June 15, 2016). The bill was referred to the Committee on Energy and Commerce.

H.R. 5486 (Byrne, R-Ala.) (land use) would reaffirm that certain land has been taken into trust for the benefit of the Poarch Band of Creek Indians. 162 Cong. Rec. H3913 (daily ed. June 15, 2016). The bill was referred to the Committee on Natural Resources.

H.R. 5489 (Byrne, R-Ala.) (energy) would amend the Internal Revenue Code of 1986 to make qualified biogas property and qualified manure resource recovery property eligible for the energy credit and to permit new clean renewable energy bonds to finance qualified biogas property. 162 Cong. Rec. H3913 (daily ed. June 15, 2016). The bill was referred to the Committee on Natural Resources.

H.R. 5500 (Cartwright, D-Pa.) (natural resources) would protect taxpayers from liability associated with the reclamation of surface coal mining operations. 162 Cong. Rec. H3965 (daily ed. June 16, 2016). The bill was referred to the Committee on Natural Resources.

H.R. 5516 (Loebsack, D-Iowa) (natural resources) would establish a National Flood Research and Education Center to provide research, data, and recommendations on physical science, social science, economic analysis, policy analysis, risk analysis, monitoring, predicting, and planning as they relate to flooding and flood-related

issues. 162 Cong. Rec. H3965 (daily ed. June 16, 2016). The bill was referred to the Committee on Science, Space, and Technology and the Committee on Transportation and Infrastructure.

H.R. 5520 (McSally, R-Ariz.) (land use) would provide for the unencumbering of title to nonfederal land owned by the city of Tucson, Arizona, for purposes of economic development by conveyance of the federal reversionary interest to the city. 162 Cong. Rec. H3965 (daily ed. June 16, 2016). The bill was referred to the Committee on Natural Resources.

H.R. 5531 (Hunter, R-Cal.) (toxic substances) would amend Title 46, U.S. Code, to improve maritime transportation, and amend OPA §1012, relating to oil spill disbursements auditing and reporting. 162 Cong. Rec. H3974 (daily ed. June 20, 2016). The bill was referred to the Committee on Transportation and Infrastructure.

H.R. 5543 (Lawrence, D-Mich.) (toxic substances) would prioritize education and training for existing and new environmental health professionals. 162 Cong. Rec. H4052 (daily ed. June 21, 2016). The bill was referred to the Committee on Energy and Commerce and the Committee on Education and the Workforce.

H.R. 5551 (Smith, R-Mo.) (governance) would require advance appropriations for the expenditure of any funds collected by EPA. 162 Cong. Rec. H4052 (daily ed. June 21, 2016). The bill was referred to the Committees on Energy and Commerce, Agriculture, Transportation and Infrastructure, and Science, Space, and Technology.

H.R. 5556 (Grijalva, D-Ariz.) (land use) would establish the Great Bend of the Gila National Monument in the state of Arizona. 162 Cong. Rec. H4170 (daily ed. June 22, 2016). The bill was referred to the Committee on Natural Resources.

H.R. 5564 (Kildee, D-Mich.) (land use) would require that the Secretary of the Interior, acting through the National Park Service, create a program to help ensure that youth from urban areas have access to National Parks.

162 Cong. Rec. H4170 (daily ed. June 22, 2016). The bill was referred to the Committee on Natural Resources.

H.R. 5565 (Kildee, D-Mich.) (land use) would amend the Federal Lands Recreation Enhancement Act to provide free admission to federal recreational lands and waters for children 17 years of age and younger on their birthday. 162 Cong. Rec. H4170 (daily ed. June 22, 2016). The bill was referred to the Committee on Natural Resources and the Committee on Agriculture.

H.R. 5570 (Tipton, R-Colo.) (land use) would release a Wilderness Study Area administered by BLM in Jackson County, Colorado, that was not found suitable for wilderness designation, and would release residual Wilderness Study Area acreage in Mesa and Delta Counties, Colorado, that were excluded from their respective wilderness designations from continued management for wilderness characteristics. 162 Cong. Rec. H4170 (daily ed. June 22, 2016). The bill was referred to the Committee on Natural Resources.

H.R. 5577 (Graves, R-La.) (water), would amend the Outer Continental Shelf Lands Act to authorize the Secretary of the Interior to conduct offshore oil and gas lease sales through Internet-based live lease sales. 162 Cong. Rec. H4180 (daily ed. June 24, 2016). The bill was referred to the Committee on Natural Resources.

H.R. 5584 (Sablan, D-N. Mar. I.) (wildlife) would prohibit the sale of shark fins. 162 Cong. Rec. H4180 (daily ed. June 24, 2016). The bill was referred to the Committees on Natural Resources, Foreign Affairs, and Ways and Means.

H.R. 5595 (Huffman, D-Cal.) (natural resources) would direct the Secretary of the Army, acting through the Chief of Engineers, to revise the water manuals of certain flood control projects. 162 Cong. Rec. H4185 (daily ed. June 28, 2016). The bill was referred to the Committee on Transportation and Infrastructure.

H.R. 5597 (Israel, D-N.Y.) (energy) would authorize microenterprise assistance for renewable energy projects in

developing countries. 162 Cong. Rec. H4185 (daily ed. June 28, 2016). The bill was referred to the Committee on Foreign Affairs.

H.R. 5605 (Noem, R-S.D.) (land use) would amend the Food Security Act of 1985 with respect to the administration of wetland determinations. 162 Cong. Rec. H4185 (daily ed. June 28, 2016). The bill was referred to the Committee on Agriculture.

H.R. 5610 (Thompson, D-Cal.) (natural resources) would amend the Internal Revenue Code of 1986 to exclude from gross income amounts received from state-based earthquake loss

mitigation programs. 162 Cong. Rec. H4185 (daily ed. June 28, 2016). The bill was referred to the Committee on Ways and Means.

H. Res. 788 (Nunes, R-Cal.) (natural resources) would express the sense of the House of Representatives that Arctic lease sales that are already included in the proposed 2017-2022 Outer Continental Shelf Oil & Gas Leasing Program. 162 Cong. Rec. H3913 (daily ed. June 15, 2016). The bill was referred to the Committee on Natural Resources.

H. Res. 791 (Moolenaar, R-Mich.) (land use) would support the recog-

nition of 2016 as the “Year of Pulse Crops” and acknowledge the nutritional benefit and important contribution to soil health of pulse crops. 162 Cong. Rec. H3965 (daily ed. June 16, 2016). The bill was referred to the Committee on Agriculture and the Committee on Foreign Affairs.

H. Con. Res. 136 (Gosar, R-Ariz.) (climate change) would express the opposition of Congress to the president’s proposed Coastal Climate Resilience Program. 162 Cong. Rec. H3703 (daily ed. June 10, 2016). The bill was referred to the Committee on Natural Resources.

In the Courts

These entries summarize recent cases under the following categories: Air, Energy, Waste, Water, and Wildlife. The entries are arranged alphabetically by case name within each category. This material is updated monthly. For archived materials, visit <http://www.elr.info/judicial>.

AIR

Environment Texas Citizens Lobby v. ExxonMobil Corp., No. 15-20030, 46 ELR 20200 (5th Cir. May 27, 2016). The Fifth Circuit vacated and remanded a lower court decision that imposed no penalties against an oil company for alleged CAA permit violations at its industrial complex in Baytown, Texas.

Nucor Steel-Arkansas v. Big River Steel, LLC, No. 15-1615, 46 ELR 20109 (8th Cir. June 8, 2016). The Eighth Circuit affirmed a lower court decision dismissing a steel company’s CAA citizen lawsuit seeking injunctive relief to stop a competitor from constructing or continuing to construct a steel mill.

Sierra Club v. United States Environmental Protection Agency, No. 10-cv-01541, 46 ELR 20113 (D.D.C. June 14, 2016). A district court ordered EPA to impose a “good neighbor” federal implementation plan for Texas with respect to the 1997 fine particulate matter NAAQS.

United States v. Sawyer, No. 15-5181, 46 ELR 20108 (6th Cir. June 3, 2016). The Sixth Circuit upheld a

lower court decision sentencing an individual to 60 months in prison and ordered the individual and his co-defendants, jointly and severally, to pay \$10,388,576.71 in restitution to EPA for asbestos NESHAP violations.

Utah Physicians for a Healthy Environment v. Kennecott Utah Copper LLC, No. 2:11-cv-01181, 46 ELR 20107 (D. Utah June 8, 2016). A district court dismissed on summary judgment environmental groups’ lawsuit against a mining company for alleged SIP violations as it relates to NAAQS for coarse particulate matter.

ENERGY

Dewey Home & Investment Properties, LLC v. Delaware Riverkeeper Network, No. 15-10393, 46 ELR 20201 (Pa. Ct. Com. Pl. May 25, 2016). A Pennsylvania court dismissed developers’ lawsuit against environmental activists and township residents for alleged tortious interference with contract with respect to a series of oil and gas leases.

EQT Production Co. v. Wender, No. 2:16-cv-00290, 46 ELR 20110 (S.D. W. Va. June 10, 2016). A district court held

that West Virginia law preempts a county’s ban on wastewater disposal wells.

Oregon Natural Desert Ass’n v. Jewell, No. 13-36078, 46 ELR 20204 (9th Cir. May 27, 2016). The Ninth Circuit held that BLM’s approval of a wind-energy development project in southeastern Oregon failed to adequately address impacts to the greater sage grouse in violation of NEPA.

Protect Our Communities Foundation v. Jewell, Nos. 14-55666, -55842, 46 ELR 20106 (9th Cir. June 7, 2016). The Ninth Circuit upheld BLM’s decision to grant a right-of-way allowing a wind energy project to be built and operated on federal lands in southeast San Diego County.

Wyoming v. United States Department of Interior, Nos. 2:15-CV-043, -041, 46 ELR 20114 (D. Wyo. June 21, 2016). A district court struck down BLM’s rule regulating hydraulic fracturing on federal and Native American lands.

WASTE

New York v. U.S. Nuclear Regulatory Commission, No. 14-1210, 46 ELR

20105 (D.C. Cir. June 3, 2016). The D.C. Circuit denied several states', environmental groups', and Native Americans' petitions for review challenging an NRC rule and generic EIS concerning the continued, and possibly indefinite, storage of spent fuel from nuclear power plants in the United States.

WATER

Coyote Lake Ranch, LLC v. Lubbock, City of, No. 14-0572, 46 ELR 20203 (Tex. May 27, 2016). The Texas Supreme Court held that the common-law "accommodation doctrine," which gives an oil-and-gas lessee an implied right to use the land as reasonably necessary to produce and remove the minerals as long as it exercises that right with due

regard for the landowner's rights, also extends to groundwater.

Duarte Nursery, Inc. v. United States Army Corps of Engineers, No. 2:13-cv-02095, 46 ELR 20111 (E.D. Cal. June 10, 2016). A district court, on motions for summary judgment, held that the owner of a farm violated the CWA when he allowed wetlands on his property to be tilled.

State v. Atlantic Richfield Co., No. 2015-201, 46 ELR 20099 (Vt. May 27, 2016). The Vermont Supreme Court affirmed a lower court decision dismissing as untimely the state's claims against a number of companies for generalized injury to state waters due to groundwater contamination from methyl tertiary butyl ether, a gasoline additive.

United States Army Corps of Engineers v. Hawkes Co., No. 15-290, 46 ELR 20202 (U.S. May 31, 2016). The U.S. Supreme Court held that a U.S. Army Corps of Engineers jurisdictional determination is a final agency action subject to judicial review under the APA.

WILDLIFE

New Mexico Department of Game & Fish v. United States Department of Interior, No. CV 16-00462, 46 ELR 20112 (D.N.M. June 10, 2016). A district court preliminarily enjoined FWS from releasing endangered Mexican wolves in New Mexico without first obtaining the necessary permits from the state's game and wildlife agency.

In the Federal Agencies

These entries cover the period June 1, 2016, through June 30, 2016. Citations are to the *Federal Register* (FR). Entries below are organized by Final Rules, Proposed Rules, and Notices. Within each section, entries are further subdivided by the subject matter area, with entries listed chronologically. This material is updated monthly. For archived material, visit <http://elr.info/daily-update/archives>.

Final Rules

AIR

EPA revised CAA regulations applicable to the permitting of sources in the oil and natural gas sector to clarify the term "adjacent" when used to determine the scope of a "stationary source" for purposes of the PSD and nonattainment new source review preconstruction permitting programs and to clarify the scope of a "major source" in the Title V operating permit program in the onshore oil and natural gas sector. 81 FR 35622 (6/3/16).

EPA amended the current new source performance standards (NSPS) for the oil and natural gas source category to improve implementation of the NSPS; the Agency also established new greenhouse gas and volatile organic compound standards for the oil and natural gas source category. 81 FR 35823 (6/3/16).

EPA finalized a federal implementation plan that applies to new true minor sources and minor modifications at existing true minor sources in the oil and natural gas production and natural gas processing segments of the oil and natural gas sector that are locating or expanding in Native American reservations or in other areas of Native American country over which a Native American tribe, or EPA, has demonstrated the tribe's jurisdiction; the Agency also finalized several amendments to the Federal Indian Country Minor New Source Review rule. 81 FR 35943 (6/3/16).

EPA amended the secondary aluminum production NESHAP that was promulgated on September 18, 2015, with various corrections and clarifications that will help to improve compliance and implementation of the rule and with updates to reporting on its website. 81 FR 38085 (6/13/16).

EPA finalized its reconsideration of the February 7, 2013, rule titled, "Stan-

dards of Performance for New Stationary Sources and Emissions Guidelines for Existing Sources: Commercial and Industrial Solid Waste Incineration Units," by defining "continuous emission monitoring system data during startup and shutdown periods" and "kiln" and by setting a particulate matter limit for the waste-burning kiln subcategory and a fuel variability factor for coal-burning energy recovery units. 81 FR 40955 (6/23/16).

SIP Approvals: California (submission for the 2006 fine particulate matter (PM) NAAQS from major sources in the El Dorado County air quality management district and negative determination for the 2006 fine PM NAAQS from major sources in the Yolo-Solano air quality management district) 81 FR 36803 (6/8/16); (definition of volatile organic compounds (VOCs) in the Yolo-Solano air quality management district and emissions of VOCs from the surface coating operations of wood products in the Eastern Kern air pollution control district) 81

FR 39211 (6/16/16); (control of emissions from new on-road and new and in-use off-road vehicles and engines) 81 FR 39423 (6/16/16). Connecticut (infrastructure requirements for the lead, ozone, nitrogen dioxide, and sulfur dioxide NAAQS) 81 FR 35636 (6/3/16). Illinois (update to rules for the 2012 primary NAAQS for fine particulate matter, monitoring methods, sunset provisions, and exceptional events) 81 FR 37517 (6/10/16). Illinois/Missouri/Ohio (attainment of the 2008 ozone NAAQS for the Cleveland, Ohio/St. Louis, Missouri-Illinois nonattainment areas for the 2013-2015 monitoring period). 81 FR 41444 (6/27/16). Indiana (Stage II vapor recovery program for the Indiana portion of the Chicago and Louisville, Kentucky, ozone nonattainment areas) 81 FR 37160 (6/9/16). Iowa (definition of greenhouse gas and revision to PSD program definition of “subject to regulation” and adoption of plantwide applicability limitations) 81 FR 39585 (6/17/16). Kansas (allowances for annual nitrogen oxide emissions under the Cross-State Air Pollution Rule for 2017 through 2019) 81 FR 42256 (6/29/16). Kentucky, ozone nonattainment areas) 81 FR 37160 (6/9/16). Michigan (update to materials incorporated by reference) 81 FR 41818 (6/28/16). Minnesota (sulfur dioxide NAAQS for an industrial technology center in Fridley) 81 FR 37162 (6/9/16); (reduction in sulfur dioxide emissions from a refinery in Rosemount) 81 FR 41447 (6/27/16). Missouri (portions of submittal concerning allocations of nitrogen oxide and sulfur dioxide emission allowances under the Cross-State Air Pollution Rule for 2017 and later years) 81 FR 41838 (6/28/16). New Jersey (finding of failure to submit satisfactory SIP for the 2008 eight-hour ozone NAAQS) 81 FR 38963 (6/15/16). North Carolina (visibility transport infrastructure SIP requirements for the ozone, nitrogen dioxide, sulfur dioxide, and fine particulate matter NAAQS) 81 FR 35364 (6/3/16). Oregon (attainment of the 2006 24-hour fine particulate matter NAAQS for the Klamath Falls nonattainment area) 81 FR 36176 (6/6/16). Tennessee (redesignation to attainment of the 2008 eight-hour ozone NAAQS, base-year emissions inventory, and maintenance plan for the Tennessee portion of the Memphis,

TN-MS-AR nonattainment area) 81 FR 40816 (6/23/16). Virginia (infrastructure requirements for the 2012 fine particulate matter NAAQS) 81 FR 39208 (6/16/16). Wyoming (air quality permits for major sources in nonattainment areas) 81 FR 35271 (6/2/16).

SIP Disapprovals: Arizona (limited disapproval of provisions on the issuance of new source review permits for stationary sources concerning fine particulate matter in the Nogales and West Central Pinal nonattainment areas) 81 FR 40525 (6/22/16). Indiana/Ohio (interstate transport infrastructure submissions for the 2008 ozone NAAQS) 81 FR 38957 (6/15/16).

WASTE

EPA approved revisions to Nevada’s state hazardous waste management program under RCRA. 81 FR 35641 (6/3/16).

EPA authorized revisions to South Dakota’s hazardous waste management program under RCRA and incorporated by reference authorized provisions of the state’s regulations. 81 FR 41222 (6/24/16).

EPA authorized revisions to Wyoming’s hazardous waste management program under RCRA and incorporated by reference authorized provisions of the state’s regulations. 81 FR 41229 (6/24/16).

WATER

EPA issued a final CWA regulation on effluent limitations guidelines and standards for onshore unconventional oil and gas extraction facilities. 81 FR 41845 (6/28/16).

WILDLIFE

FWS updated ESA §4(d) to increase protection for African elephants, which have been listed as threatened since 1978, in response to the alarming rise in poaching due to the growing illegal trade of ivory. 81 FR 36387 (6/6/16).

FWS designated approximately 55.7 kilometers in McKinley and Cibola Counties, New Mexico, as critical habi-

tat under the ESA for the Zuni bluehead sucker. 81 FR 36761 (6/7/16).

FWS determined threatened status under the ESA for the elfin-woods warbler, a bird species in Puerto Rico, and adopted a rule to provide for conservation of the species. 81 FR 40534 (6/22/16).

NMFS determined that the Nassau grouper meets the definition of a threatened species under the ESA and concluded that the species is likely to become in danger of extinction within the foreseeable future due to overutilization through historical harvest and by reductions in the number and size of spawning aggregations. 81 FR 42268 (6/29/16).

Proposed Rules

AIR

EPA proposed to amend the secondary aluminum production NESHAP that was promulgated on September 18, 2015, with various corrections and clarifications that will help to improve compliance and implementation of the rule and with updates to reporting on its website. 81 FR 38122 (6/13/16).

EPA proposed to remove a date restriction from the permit rescission provision contained in its federal PSD permitting regulations; however, permit rescissions will still be limited to circumstances where the requirement for a source to meet the conditions of a major new source review permit is no longer present. 81 FR 38640 (6/14/16).

EPA proposed to remove CAA Title V emergency affirmative defense provisions for state and federal operating permit programs because they are inconsistent with the enforcement structure of the CAA and with recent D.C. Circuit Court decisions. 81 FR 38645 (6/14/16).

EPA proposed to update a portion of the Outer Continental Shelf Air Regulations for the Ventura County air pollution control district of California to

remain consistent with onshore requirements. 81 FR 39607 (6/17/16).

EPA proposed design details and rate-based and mass-based model trading rules for the Clean Energy Incentive Program for states that want to incentivize certain early emission reduction projects under the Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units. 81 FR 42939 (6/30/16).

SIP Proposals: Alabama (portions of submittal concerning allocations of nitrogen oxide and sulfur dioxide emission allowances under the Cross-State Air Pollution Rule) 81 FR 41914 (6/28/16). Arizona (replacement of control technology optimization requirements for nitrogen oxides at two cement plants) 81 FR 42600 (6/30/16). California (definition of volatile organic compounds (VOCs) in the Yolo-Solano air quality management district and emissions of VOCs from the surface coating operations of wood products in the Eastern Kern air pollution control district) 81 FR 39236 (6/16/16). Colorado (revised maintenance plan for the coarse particulate matter NAAQS in the Lamar area, except for one aspect of the plan's contingency measures) 81 FR 34935 (6/1/16). Connecticut (permission to create and/or use emission credits with emission trading and agreement orders to comply with nitrogen oxide emission limits) 81 FR 38999 (6/15/16). Georgia (portions of submission on infrastructure requirements for the 2010 one-hour nitrogen dioxide NAAQS) 81 FR 41905 (6/28/16). Idaho (updates and incorporation by reference of revised stationary source permitting rules, including emission and sulfur content limits) 81 FR 37170 (6/9/16). Illinois (update to rules for the 2012 primary NAAQS for fine particulate matter, monitoring methods, sunset provisions, and exceptional events) 81 FR 37564 (6/10/16). Illinois/Missouri/Ohio (attainment of the 2008 ozone NAAQS for the Cleveland, Ohio/St. Louis, Missouri-Illinois nonattainment areas for the 2013-2015 monitoring period) 81 FR 41497 (6/27/16). Indiana (supplemental approval for redesignation to attainment of the 1997 annual fine particulate matter NAAQS for the Indiana portion of the Louisville/

Indiana-Kentucky nonattainment area) 81 FR 40834 (6/23/16). Iowa (definition of greenhouse gas and revision to PSD program definition of "subject to regulation" and adoption of plantwide applicability limitations) 81 FR 39604 (6/17/16); (infrastructure submissions for the 1997 and 2006 fine particulate matter NAAQS) 81 FR 40825 (6/23/16). Kansas (allowances for annual nitrogen oxide emissions under the Cross-State Air Pollution Rule for 2017 through 2019) 81 FR 42294 (6/29/16). Kentucky (emission requirements for the changeover from coal-fired units to a new natural gas-fired combined-cycle generating unit and auxiliary boiler at a Louisville generating station) 81 FR 39002 (6/15/16); (portions of the infrastructure submission for the 2010 one-hour nitrogen dioxide NAAQS) 81 FR 41488 (6/27/16). Louisiana (NAAQS for fine particulate matter, lead, ozone, nitrogen dioxide, and sulfur dioxide) 81 FR 35674 (6/3/16); (disapproval of interstate transport submission for the 2008 ozone NAAQS) 81 FR 36496 (6/7/16). Maryland (continuous opacity and continuous emissions monitoring and quality assurance and quality control requirements) 81 FR 39605 (6/17/16). Minnesota (sulfur dioxide NAAQS for an industrial technology center in Fridley) 81 FR 37175 (6/9/16); (reduction in sulfur dioxide emissions from a refinery in Rosemount) 81 FR 41497 (6/27/16). Mississippi (partial approval of infrastructure submission for the 2012 annual fine particulate matter NAAQS, except for portion on state board majority requirements) 81 FR 36848 (6/8/16). Missouri (portions of submittal concerning allocations of nitrogen oxide and sulfur dioxide emission allowances under the Cross-State Air Pollution Rule for 2017 and later years) 81 FR 41924 (6/28/16). New York (partial approval and partial disapproval of infrastructure submission for the 2008 ozone NAAQS) 81 FR 40229 (6/21/16). North Carolina (reasonable progress goals for the first implementation period of a regional haze plan) 81 FR 38986 (6/15/16). Ohio (infrastructure requirements for the 2012 fine particulate matter NAAQS) 81 FR 40827 (6/23/16); (removal of Stage II vapor recovery program requirements for the Cincinnati, Cleveland, and Dayton ozone areas) 81

FR 42597 (6/30/16). Oklahoma (updates to PSD and nonattainment new source review permit programs to be consistent with federal requirements) 81 FR 42587 (6/30/16). Pennsylvania (reasonably available control technology requirements for nitrogen oxides and volatile organic compounds as precursors for the 1997 eight-hour ozone NAAQS in Philadelphia County) 81 FR 38992 (6/15/16). South Carolina (conditional approval of prong 4 portions of infrastructure submission for the 2008 eight-hour ozone, 2010 one-hour nitrogen dioxide, 2010 one-hour sulfur dioxide, and 2012 annual fine particulate matter NAAQS) 81 FR 36842 (6/8/16); (portions of the infrastructure submission for the 2010 nitrogen dioxide NAAQS, except for those pertaining to PSD permitting and interstate transport) 81 FR 41498 (6/27/16). Tennessee (lowering of applicability thresholds for certain sources subject to federal Stage I requirements, removal of Stage II vapor control requirements, and addition of requirements for decommissioning gasoline dispensing facilities and for new and upgraded gasoline dispensing facilities in the Nashville area) 81 FR 34940 (6/1/16).

LAND USE

The U.S. Forest Service and FWS proposed adding certain submerged parcels of land in the Tongass National Forest in Alaska to the list of those that are subject to the subsistence provisions of Title VIII of the Alaska National Interest Lands Conservation Act. 81 FR 36836 (6/8/16).

WASTE

EPA proposed to approve revisions to Wyoming's hazardous waste management program under RCRA and to incorporate by reference authorized provisions of the state's regulations. 81 FR 41284 (6/24/16).

EPA proposed to approve revisions to South Dakota's hazardous waste management program under RCRA and to incorporate by reference authorized provisions of the state's regulations. 81 FR 41285 (6/24/16).

WILDLIFE

NMFS proposed to designate critical habitat for the Gulf of Maine, New York Bight, and Chesapeake Bay distinct population segments of Atlantic sturgeon. 81 FR 35701 (6/3/16).

NMFS proposed to designate critical habitat for the endangered Carolina and South Atlantic distinct population segments of Atlantic sturgeon. 81 FR 36077 (6/3/16).

FWS proposed to designate approximately 27,125 acres in several municipalities of Puerto Rico as critical habitat under the ESA for the elfin-woods warbler. 81 FR 40632 (6/22/16).

Notices

AIR

EPA entered into a proposed consent decree under the CAA in *Partnership for Policy Integrity v. McCarthy*, No. 5:16-cv-00038-CAR (M.D. Ga.), that establishes a deadline for the Agency to take final action on a petition seeking objection to a CAA Title V permit issued to Piedmont Green Power, LLC, authorizing the operation of a 60.5-megawatt steam-turbine generator in Barnesville, Georgia. 81 FR 37588 (6/10/16).

EPA announced delegation of authority to Virginia to implement and enforce additional or revised NESHAPs. 81 FR 38177 (6/13/16).

EPA announced the availability of two finalized chapters of the Air Pollution Control Cost Manual, “Chapter 1—Selective Non-Catalytic Reduction” and “Chapter 2—Selective Catalytic Reduction,” that incorporate comments received on draft versions. 81 FR 38702 (6/14/16).

EPA entered into a proposed consent decree under the CAA in *Sierra Club v. McCarthy*, No. 1:16-cv-235 (D.D.C.), that establishes a deadline for the Agency to respond to a petition seeking objection to a CAA Title V permit issued

to the Tennessee Valley Authority’s Bull Run Fossil Plant in Clinton, Tennessee. 81 FR 39922 (6/20/16).

EPA entered into a proposed consent decree under the CAA in *Sierra Club v. McCarthy*, No. 3:15-cv-04328-JD (N.D. Cal.), that establishes a deadline for the Agency to take final action on SIP submissions from Louisiana, Montana, New Jersey, New York, South Dakota, Wisconsin, and Wyoming on interstate transport requirements and on a federal implementation plan for California and Kentucky. 81 FR 42351 (6/29/16).

CLIMATE CHANGE

EPA seeks public comment on a draft document titled, “Evaluating Urban Resilience to Climate Change: A Multi-Sector Approach,” which was prepared by the National Center for Environmental Assessment, to help cities identify areas of resilience and vulnerability to climate change impacts. 81 FR 40302 (6/21/16).

ENERGY

DOE announced proposed rulemaking implementing the Energy Independence and Security Act of 2007 that would establish energy conservation standards for manufactured housing based upon recommendations of a working group and current HUD construction and safety standards. 81 FR 39755 (6/17/16).

GOVERNANCE

CEQ announced availability of its guidance document, “Guidance for Federal Agency Implementation of Workplace Charging Pursuant to the Fixing America’s Surface Transportation (FAST) Act: Level 1 Charging Receptacles.” 81 FR 39029 (6/15/16).

TOXIC SUBSTANCES

EPA announced the availability of a draft pesticide registration notice entitled, “Guidance for Pesticide Registrants on Pesticide Resistance Manage-

ment Labeling,” which would provide guidance for registrants to follow when developing resistance management information to include on their pesticide labels. 81 FR 35766 (6/3/16).

EPA announced the availability of a draft pesticide registration notice entitled, “Guidance for Herbicide Resistance Management Labeling, Education, Training, and Stewardship,” which would communicate the Agency’s approach to addressing herbicide-resistant weeds by providing guidance on labeling, education, training, and stewardship for herbicides undergoing registration review or registration (i.e., new herbicide and actives, new uses proposed for use on herbicide-resistant crops, or other case-specific registration actions). 81 FR 35767 (6/3/16).

EPA announced the availability of and seeks public comment on a draft pesticide registration notice, entitled, “Determination of Minor Use under Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), Section 2(II),” which would provide guidance on identifying pesticides for minor uses to protect communities from harmful pests. 81 FR 38704 (6/14/16).

WASTE

EPA entered into a proposed administrative settlement under CERCLA concerning the Cannon Drive Drum Superfund site in Social Circle, Georgia, that addresses recovery of Agency cleanup costs. 81 FR 36911 (6/8/16).

EPA completed its required review of DOE’s Biennial Environmental Compliance Report that documents the Waste Isolation Pilot Project’s continued compliance with designated federal laws pertaining to public health and safety or the environment covering the period April 1, 2012, through March 31, 2014. 81 FR 38703 (6/14/16).

EPA entered into a proposed administrative settlement under CERCLA concerning the Lincoln Park Superfund site in Canyon City, Colorado, that requires the settling party to pay for past U.S. oversight costs. 81 FR 39262 (6/16/16).

EPA entered into a proposed administrative settlement under CERCLA concerning the Ely Copper Mine Superfund site in Vershire, Vermont, that requires the settling parties to effectuate transfer of the main site property but remain involved in the timber harvesting and management of the property while monitoring and maintaining the remedy at the site for 30 years; to allow EPA to remove and use borrow material on the site and an adjacent property; to allow access by the Agency and its contractors; and to prepare and record any documents necessary to implement institutional controls. 81 FR 39263 (6/16/16).

EPA entered into a proposed administrative de minimis settlement under CERCLA and RCRA that requires the settling parties to pay \$1.7 million in U.S. response costs and potential natural resource damage claims concerning the Casmalia Resources Superfund site in Santa Barbara County, California. 81 FR 41536 (6/27/16).

WATER

The U.S. Army Corps of Engineers seeks public comment on the reissuance of existing nationwide permits, general conditions, and definitions, with some modifications, under CWA §404 and Rivers and Harbors Act §10, as well as on the issuance of two new permits and one new general condition. 81 FR 35185 (6/1/16).

EPA approved in part and disapproved in part West Virginia's 2014 CWA §303(d) list of water quality-limited segments and associated pollutants; the Agency will consider public comments before transmitting its final listing decision to the state. 81 FR 31350 (6/2/16).

EPA Region 2 announced the availability of a five-year final NPDES general permit for discharges from small municipal separate storm sewer systems from urbanized areas within the Commonwealth of Puerto Rico to waters of the United States. 81 FR 38175 (6/13/16).

EPA announced the availability of a final NPDES general permit for federal aquaculture facilities and for those

located in Indian country within the boundaries of Washington. 81 FR 40301 (6/21/16).

WILDLIFE

FWS announced 90-day findings on petitions to list the U.S. population of northwestern moose as an endangered or threatened distinct population segment (DPS) under the ESA, and to delist the golden-cheeked warbler from the list of threatened and endangered species; FWS proposed to find that delisting the warbler was not warranted but that listing the northwestern moose DPS may be warranted. 81 FR 35698 (6/3/16).

NMFS announced the availability of the 2015 marine mammal stock assessment reports for the 108 stocks that are currently finalized. 81 FR 38676 (6/14/16).

NMFS announced a 12-month finding on a petition to list the smooth hammerhead shark as threatened or endangered under the ESA; the agency found that listing is not warranted because the species is not currently in danger of extinction throughout all or a significant portion of its range and is not likely to become so within the foreseeable future. 81 FR 41934 (6/28/16).

NMFS announced a 90-day finding on a petition to list the Maui and Kona reef manta ray populations as threatened distinct population segments under the ESA; the agency determined that the species are not eligible for such listing but will conduct a status review to determine if the species warrants listing throughout all or a significant portion of its range. 81 FR 41958 (6/28/16).

DOJ NOTICES OF SETTLEMENT

United States v. Pilkington North America, Inc., No. 16-5654 (N.D. Ill. May 27, 2016). A settling CERCLA defendant entered into a proposed DOJ consent decree providing for the reimbursement of response costs and the performance of injunctive relief in connection with the Ottawa Township Flat Glass Su-

perfund site in Naplate, Illinois. 81 FR 36350 (6/6/16).

United States v. Mayor & City Council of Baltimore, No. 1:02-CV-01524-JFM (D. Md. June 1, 2016). Under a proposed modification to a 2002 consent decree, a settling CWA defendant responsible for violations in the operation of its sewer system and wastewater control plant in Baltimore, Maryland, will be given more time to conduct the necessary work using a two-phased approach, with all work to be completed no later than December 2030, followed by two years of post-implementation monitoring. 81 FR 36584 (6/7/16).

United States v. Newport Biodiesel, Inc., No. 1:16-cv-00242 (D.R.I. June 1, 2016). A settling CAA, CWA, and EPCRA defendant that failed to comply with regulations governing emissions of methanol; to design and maintain a safe facility and take steps to prevent accidental releases; to prepare and implement a spill prevention control and countermeasure plan; and to file chemical inventory forms at its biodiesel manufacturing facility in Newport, Rhode Island, must pay a \$396,000 civil penalty and perform injunctive relief at the site. 81 FR 36585 (6/7/16).

United States v. Owyhee Construction, Inc., No. 3:15-cv-00088-EJL (D. Idaho June 13, 2016). Settling CERCLA defendants responsible for violations at the Orofino Asbestos Superfund site in Orofino, Idaho, must make a lump sum payment of \$475,000 and payments totaling \$48,000 to be paid quarterly in installments over two years as reimbursement for past U.S. response costs. 81 FR 39712 (6/17/16).

United States v. Metal Conversion Technologies, LLC, No. 4:16-cv-00168-HLM (N.D. Ga. June 20, 2016). Settling RCRA, SWDA, and Georgia Comprehensive Solid Waste Management Act defendants responsible for violations related to the handling, treatment, storage, and disposal of solid, hazardous, and universal waste at their facility in Cartersville, Georgia, must pay a \$25,000 civil penalty and perform injunctive relief on eight different claims to determine the extent of and remediate any disposals of the waste. 81 FR 41350 (6/24/16).

United States v. Wyandotte, City of, No. 11-cv-12181 (E.D. Mich. June 15, 2016). A settling CAA defendant that violated terms of a prior consent decree concerning violations at two of its coal-fired electric generating units (EGUs) in Wyandotte, Michigan, must pay \$425,000 in stipulated penalties, restrict one EGU to burning only natural gas, and retire the other EGU. 81 FR 41352 (6/24/16).

United States v. J.S.B. Industries, Inc., No. 1:16-cv-11152-DPW (D. Mass. June 20, 2016). Settling CAA, CERCLA, and EPCRA defendants responsible for violations in connection with the use and handling of anhydrous ammonia and sulfuric acid at two baked goods facilities in Chelsea and Lawrence, Massachusetts, must pay a \$156,000 civil penalty, plus interest, and perform a supplemental environmental project valued at \$119,000 involving the provision of emergency response equipment to the fire departments serving the two communities. 81 FR 41596 (6/27/16).

United States v. Genesco Inc., No. CV-09-3917 (E.D.N.Y. June 22, 2016). A settling CERCLA defendant responsible for violations in connection with the Fulton Avenue Superfund site located in and around the village of Garden City Park in New York must implement and/or ensure implementation of EPA's First Operable Unit Record of Decision Amendment for the site. 81 FR 41597 (6/27/16).

United States v. Marathon Petroleum Co., LLC, No. 2:12-cv-11544 (E.D. Mich. June 9, 2016). Under a proposed first amendment to a consent decree, a settling CAA defendant must pay a \$326,500 civil penalty; install seven flare gas recovery systems at five refineries and operate them with minimal downtime; maintain two extra, interchangeable compressors for delivery on short notice; shut down one fence line flare at its Detroit refinery and install nitrogen oxide controls on heaters at its Garyville, Louisiana, and Canton, Ohio, refineries as mitigation projects; and will be given deadline extensions

for compliance with certain hydrogen sulfide limits at nine flares. 81 FR 41597 (6/27/16).

United States v. D.G. Yuengling & Son, Inc., No. 3:16-cv-01252 (D. Pa. June 23, 2016). A settling CWA defendant that violated pretreatment permits at two brewery facilities in Pottsville, Pennsylvania, must pay a \$2.8 million civil penalty and perform extensive injunctive relief to improve operational, maintenance, notification, and response processes. 81 FR 41996 (6/28/16).

United States v. Trader Joe's Co., No. 3:16-cv-03444-EDL (N.D. Cal. June 21, 2016). A settling CAA defendant responsible for violations of regulations governing the service and repair of commercial refrigeration appliances that use ozone-depleting refrigerant at its stores and for violations of the requirements to provide compliance information when requested must pay a \$500,000 civil penalty and perform injunctive relief. 81 FR 41996 (6/28/16).

In the State Agencies

The entries below cover state regulatory developments during the month of June 2016. The entries are arranged by state, and within each section, entries are further subdivided by subject matter. For material previously reported, visit <http://elr.info/administrative/state-updates/archive>.

CALIFORNIA

AIR

The California Air Resources Board seeks public input on proposed amendments to CAL. CODE REGS. tit. 17, §§95665-76 and Appendices A, B, and C, regarding regulations for greenhouse gas emissions standards from crude oil and natural gas facilities. The changes would incorporate by reference standard practices for testing a variety of materials, including hydrocarbon liquid mixtures and semi-solid bituminous materials. A public hearing was held on July 21, 2016. See <http://www.oal.ca.gov/res/docs/pdf/notice/23z-2016.pdf> (pp. 943-54).

LAND USE

The California Department of Pesticide Regulation proposes to amend CAL. CODE REGS. tit. 3, §6414, and to adopt CAL. CODE REGS. tit. 3, §6302, which would regulate the sale of agricultural pesticides. The rules would restrict the use and sale of certain pesticides only to licensed entities. Written comments will be accepted until 5 pm on August 1, 2016. See <http://www.oal.ca.gov/res/docs/pdf/notice/25z-2016.pdf> (pp. 1024-27).

NATURAL RESOURCES

The California Board of Forestry and Fire Protection proposes to amend CAL. CODE REGS. tit. 14, §1.5, regarding sus-

tainable forestry practices. The changes would clarify the uses of a wildland fire management plan and a working forest harvest notice. A public hearing will be held on August 24, 2016. Written comments will be accepted until 5 pm on August 1, 2016. See <http://www.oal.ca.gov/res/docs/pdf/notice/24z-2016.pdf> (pp. 980-87).

TOXIC SUBSTANCES

The California Office of Environmental Health Hazard Assessment is proposing amendments to CAL. CODE REGS. tit. 27, §25805, regarding chemicals that cause reproductive toxicity. The amendments would set a maximum allowable dose level via oral exposure for the following chemicals: atrazine; propazine; simazine; 2,4-diamino-6-

chloro-s-triazine (DACT); des-ethyl atrazine (DEA); and des-isopropyl atrazine (DIA). *See* <http://www.oal.ca.gov/res/docs/pdf/notice/24z-2016.pdf> (pp. 992-96).

WATER

The California Office of Environmental Health Hazard Assessment proposes to amend Proposition 65 in order to list bromodichloroacetic acid as a carcinogen. No public hearing is scheduled. *See* <http://www.oal.ca.gov/res/docs/pdf/notice/22z-2016.pdf> (pp. 907-08).

DELAWARE

AIR

The Delaware Department of Natural Resources and Environmental Control is proposing amendments to DEL. CODE ANN. tit. 7, §1101, regarding volatile organic compounds (VOCs) and ozone pollution. The changes would add eight compounds to the state list of VOCs and would be amended to reflect federal definitions. A public hearing was held on June 22, 2016. Written comments are also being accepted. *See* <http://regulations.delaware.gov/register/june2016/proposed/19%20DE%20Reg%201062%2006-01-16.htm>.

WATER

The Delaware Department of Natural Resources and Environmental Control is proposing amendments to DEL. CODE ANN. tit. 7, §60, concerning underground injection control. The changes would bring Delaware's regulation into compliance with federal regulations and would add requirements for multiple water management activities. A public hearing was held on July 14, 2016. Written comments are also being accepted. *See* <http://regulations.delaware.gov/register/june2016/proposed/19%20DE%20Reg%201065%2006-01-16.htm>.

The Delaware Department of Natural Resources and Environmental Control proposes amendments to DEL. CODE

ANN. tit. 7, §60, regarding underground injection control. The changes would bring state regulations into compliance with federal regulations. A public hearing was held on July 14, 2016. Written comments are also being accepted. *See* <http://regulations.delaware.gov/register/june2016/proposed/19%20DE%20Reg%201065%2006-01-16.htm>.

FLORIDA

WASTE

The Florida Department of Environmental Protection intends to amend FLA. ADMIN. CODE ANN. r. 62-505, regarding the small community wastewater facilities grants program. The changes would add new definitions, specify the types of projects available for funding, and provide instructions for streamlining the grant process, among many other changes. *See* <https://www.flrules.org/Faw/FAWDocuments/FAWVOLUMEFOLDERS2016/42112/42112doc.pdf> (pp. 2518-21).

MARYLAND

NATURAL RESOURCES

The Maryland Department of Natural Resources proposes changes to MD. CODE REGS. tit. 07, §08.07.03, regarding forest management programs. The changes would clarify definitions, establish charges for inspection, and address certifications for taxation on reforestation and timber stand improvement. No public hearing is currently scheduled. *See* http://www.dsd.state.md.us/MDR/4312/Assembled.htm#_Toc453056579.

MASSACHUSETTS

WASTE

The Massachusetts Executive Office of Energy and Environmental Affairs is

proposing amendments to MASS. CODE REGS. tit. 310, §7.15, regarding asbestos. The changes would address two issues raised by stakeholders: the requirements for repairing and replacing underground asbestos-cement pipes; and technical issues in need of correction. Public hearings were held on June 21-22, 2016, and June 28-29, 2016. *See* <http://www.mass.gov/eea/agencies/massdep/news/comment/asbestos-amendments.html>.

MISSOURI

AIR

The Missouri Department of Natural Resources proposes changes to 10 Mo. CODE REGS. ANN. tit 10, §10-6.210, regarding air quality standards. The changes would clarify procedures for submission of information, reorganize the rule, and streamline some of the definitions. A public hearing was held on July 28, 2016. Written comments will be accepted until 5 pm on August 4, 2016. *See* <https://www.sos.mo.gov/CMSImages/AdRules/moreg/current/v41n11Jun1/v41n11.pdf> (pp. 742-43).

NEW HAMPSHIRE

WATER

The New Hampshire Department of Environmental Services is proposing changes to Env-Wq 1700, regarding water quality standards for surface water. Most of the standards expired on May 21, 2016, and the department is planning to readopt them. A public hearing was held on June 21, 2016. *See* <http://www.gencourt.state.nh.us/rules/register/2016/May-26-16.pdf> (pp. 1-3).

NEW JERSEY

LAND USE

The New Jersey Department of Environmental Protection is proposing

amendments to N.J. ADMIN. CODE tit. 7, §7, the Coastal Zone Management Rules; §7a, the Freshwater Wetlands Protection Act; and §13, the Flood Hazard Area Control Act. The changes would address a variety of issues raised during a previous period of public comment, including improvements to riparian zone protections, facilitation of environmentally beneficial activities, and clarifications for permits, among others. A date for the public hearing has not yet been set. *See* <http://www.nj.gov/dep/rules/proposals/20150601b.pdf>.

WATER

The New Jersey Department of Environmental Protection proposes amendments to N.J. ADMIN. CODE tit. 7, §§7, 7A, and 13. The changes concern riparian zone protections, Flood Hazard Area Control Act rules, environmentally beneficial activities, permits, and storm-water calculation fees. A public hearing was held on July 22, 2016. Written comments will be accepted until August 19, 2016. *See* <http://www.nj.gov/dep/rules/notices/20160620a.html>.

NEW YORK

TOXIC SUBSTANCES

The New York Department of Environmental Conservation proposes to amend ENV-11-16-0006-EP, regarding chemical bulk storage. Public hearings were held on June 27 and 30, 2016. *See* <http://docs.dos.ny.gov/info/register/2016/june1/pdf/hearings.pdf>.

WASTE

The New York Department of Environmental Conservation proposes amendments to ENV-19-16-00006-EP, regarding chemical bulk storage. Public hearings were held on June 27, 28, and 30, 2016. *See* <http://docs.dos.ny.gov/info/register/2016/june15/pdf/hearings.pdf>.

NORTH CAROLINA

AIR

The North Carolina Department of Environmental Quality is proposing changes to 15 N.C. ADMIN. CODE 02D.0545 and 02D.0535, regarding emission control standards. The changes would bring state regulations into compliance with the CAA and recent court decisions on startup, shutdown, and malfunction emission limit exemptions, and would move forward with a new SIP despite involvement in litigation over EPA's call for SIPs. Public hearings were held on June 18, 2016, and June 20, 2016. Written comments will be accepted until August 1, 2016. *See* <http://www.ncoah.com/rules/register/Volume%2030%20Issue%2023%20June%201,%202016.pdf> (pp. 2442-48).

OHIO

NATURAL RESOURCES

The Ohio Department of Natural Resources proposes changes to OHIO ADMIN. CODE §§1501:14-1 and 1501:14-2, regarding rules on industrial minerals surface mining. The changes would address issues of certification, liability insurance, and the public notice of amendments to rules. A public hearing was held on July 12, 2016. *See* http://www.registerofohio.state.oh.us/jsps/publicdisplayrules/processPublicDisplayRules.jsp?entered_rule_no=1501:14-1-08&doWhat=GETBYRULENUM&crID=0.

OREGON

TOXIC SUBSTANCES

The Oregon Department of Agriculture is proposing amendments to

Chapter 603, regarding motor fuel quality standards and fuel dispenser labeling requirements. The changes would align fuel quality standards with those adopted by ASTM in order to better facilitate the movement of gasoline across the state. The labeling requirement would require sulfur labels to be placed on all diesel fuel dispensers. A public hearing was held on June 17, 2016. *See* <http://sos.oregon.gov/archives/Documents/oar/2016-june-bulletin.pdf> (p. 7).

UTAH

AIR

The Utah Department of Environmental Quality is planning to amend R307-101-3, R307-210, and R307-214 in order to incorporate by reference the *Code of Federal Regulations* into the state air quality rules, rules for stationary sources, and standards for hazardous air pollutants. No public hearing has been scheduled. *See* http://www.rules.utah.gov/publicat/bull_pdf/2016/b20160601.pdf (pp. 23-28).

WASHINGTON

AIR

The Washington Department of Ecology proposes changes to WASH. ADMIN. CODE §15-19-115 and §173-441, regarding the clean air rule and the reporting of greenhouse gas emissions. The amendments would establish emission standards for certain stationary sources, change which emissions are covered under the regulation, and modify the reporting requirements. Public hearings were held on July 12, 2016, and July 14, 2016. *See* <http://lawfilesextra.wa.gov/law/wsr/2016/12/16-12-098.htm>.

RECENT JOURNAL LITERATURE

“Recent Journal Literature” lists recently published law review and other legal periodical articles. Within subject-matter categories, entries are listed alphabetically by author or title. Articles are listed first, followed by comments, notes, symposia, surveys, and bibliographies.

AIR

- Schoedel, Emma E., *The Siren’s Song of a Trickle-Down Bureaucracy: The Transport Rule, the Problem of Air Contamination Crossing State Lines, and the EPA Crossing Its Line*, 53 DUQ. L. REV. 629 (2015).
- Stafford, Caitlin, *The Great Escape: Addressing the Problem of Fugitive Methane Emissions From the Conventional Natural Gas System Under the Clean Air Act*, 26 COLO. NAT. RESOURCES, ENERGY & ENVTL. L. REV. 351 (2015).
-

CLIMATE CHANGE

- Adams, Devani G., *Why We Cannot Wait: Transnational Networks as a Viable Solution to Climate Change Policy*, 13 SANTA CLARA J. INT’L L. 307 (2015).
- Rowell, Arden, *Foreign Impacts and Climate Change*, 39 HARV. ENVTL. L. REV. 371 (2015).
- Wirth, David A., *The International and Domestic Law of Climate Change: A Binding International Agreement Without the Senate or Congress?*, 39 HARV. ENVTL. L. REV. 515 (2015).
- Wyeth, George B. & Beth Termini, *Regulating for Sustainability*, 45 ENVTL. L. 663 (2015).
- Symposium, *The Future of Housing—Equity, Stability and Sustainability*, 54 WASHBURN L.J. 451 (2015).
-

ENERGY

- Currey, Thomas, *A Penny Saved Is a Penny Not Burned: Renewables, Efficiency, and Conservation as Alternative Means of Reducing Energy Consumption*, 26 COLO. NAT. RESOURCES, ENERGY & ENVTL. L. REV. 293 (2015).
- Easley, Brian, *The Future of Fracking in England: A Comparative Legal Analysis*, 43 GA. J. INT’L & COMP. L. 225 (2014).
- Elliott, Randolph, *Considering Non-Transmission Alternatives*, 46 ELR 10695 (Aug. 2016).
- Johnson, Julia, *Promoting the Sustainability of Biofuels in America: Looking to Brazil*, 10 TENN. J.L. & POL’Y 263 (2015).
- Panfil, Michael, *Non-Transmission Alternatives, Distributed Energy Resources, and a Multi-Directional Grid*, 46 ELR 10698 (Aug. 2016).
- Van Nostrand, James M., *Keeping the Lights on During Superstorm Sandy: Climate Change Adaptation and the Resiliency Benefits of Distributed Generation*, 23 N.Y.U. ENVTL. L.J. 92 (2015).
- Vandenbergh, Michael P. & Jonathan A. Gilligan, *Beyond Gridlock*, 40 COLUM. J. ENVTL. L. 217 (2015).

- Walsh, Kirin D., *An Industry on the Precipice of Change: Maintaining Solar Energy’s Competitive Advantage in North Carolina After the Expiration of Investment Tax Credits*, 93 N.C. L. REV. 1935 (2015).
- Welton, Shelley, *Non-Transmission Alternatives*, 46 ELR 10688 (Aug. 2016).
-

GOVERNANCE

- Anderson, Robert T., *Water Rights, Water Quality, and Regulatory Jurisdiction in Indian Country*, 34 STAN. ENVTL. L.J. 195 (2015).
- Benn, D. Randall & Brent Fewell, *Comment on The Permit Power Revisited*, 46 ELR 10658 (Aug. 2016).
- Biber, Eric & J.B. Ruhl, *The Permit Power Revisited: The Theory and Practice of Regulatory Permits in the Administrative State*, 46 ELR 10651 (Aug. 2016).
- Breggin, Linda K. et al., *Trends in Environmental Law Scholarship 2008-2015*, 46 ELR 10647 (Aug. 2016).
- Guzy, Gary S., *Rethinking Rethinking Health-Based Environmental Standards and Cost-Benefit Analysis: A Solution in Search of a Problem?*, 46 ELR 10681 (Aug. 2016).
- Katzen, Sally, *What Appears Obvious Is Not Necessarily So*, 46 ELR 10685 (Aug. 2016).
- Kraniak, Drew, *Conserving Endangered Species in Indian Country: The Success and Struggles of Joint Secretarial Order 3206 Nineteen Years On*, 26 COLO. NAT. RESOURCES, ENERGY & ENVTL. L. REV. 321 (2015).
- Lehmen, Alessandra, *The Case for the Creation of an International Environmental Court: Non-State Actors and International Environmental Dispute Resolution*, 26 COLO. NAT. RESOURCES, ENERGY & ENVTL. L. REV. 179 (2015).
- Livermore, Michael A. & Richard L. Revesz, *Rethinking Health-Based Environmental Standards and Cost-Benefit Analysis*, 46 ELR 10674 (Aug. 2016).
- Moussa, Jasmine, *Implications of the Indus Water Kishenganga Arbitration for the International Law of Watercourses and the Environment*, 64 INT’L & COMP. L.Q. 697 (2015).
- Sapp, William W. et al., *General Permits: An Environmental Minefield*, 46 ELR 10668 (Aug. 2016).
- Shenkman, Ethan G. & Aditi A. Prabhu, *Permitting and Innovation in the Digital Age*, 46 ELR 10662 (Aug. 2016).
- Wansley, Matthew, *Cost-Benefit Analysis as a Commitment Device*, 46 ELR 10706 (Aug. 2016).
-

LAND USE

- Beaty, Taylor A., *Life on the Mississippi: Reducing the Harmful Effects of Agricultural Runoff in the Mississippi River Basin*, 41 OHIO N.U. L. REV. 819 (2015).
- Dawson, Matthew R., *Perennial Cities: Applying Principles of Adaptive Law to Create a Sustainable and Resilient System of Urban Agriculture*, 53 U. LOUISVILLE L. REV. 301 (2015).

- Green, Jacob, *When Conditions Go Bad: An Examination of the Problems Inherent in the Conditional Use Permitting System*, 2014 BYU L. REV. 1185 (2014).
- Mank, Bradford C., *Standing to View Other People's Land: The D.C. Circuit's Divided Decision in Sierra Club v. Jewell*, 40 COLUM. J. ENVTL. L. 305 (2015).
- Newman, John M., *Koontz v. St. Johns River Water Management District: The Constitutionality of Monetary Exactions in Land Use Planning*, 76 MONT. L. REV. 359 (2015).
- Peters, Victoria, *A Legal Obligation to Mitigate Greenhouse Gas Emissions From Agriculture: A Challenge to the European Union's Emissions Trading System and the EU Member States With the Largest Agricultural Impact*, 19 UCLA J. INT'L L. & FOREIGN AFF. 213 (2015).
- Schmitt, Jeffrey M., *Making Sense of Extraterritoriality: Why California's Progressive Global Warming and Animal Welfare Legislation Does Not Violate the Dormant Commerce Clause*, 39 HARV. ENVTL. L. REV. 423 (2015).
- Singer, Joseph William, *Justifying Regulatory Takings*, 41 OHIO N.U. L. REV. 601 (2015).

NATURAL RESOURCES

- Brandon, Travis O., *Fearful Asymmetry: How the Absence of Public Participation in Section 7 of the ESA Can Make the "Best Available Science" Unavailable for Judicial Review*, 39 HARV. ENVTL. L. REV. 311 (2015).
- Mahaney, Allison R., *Charting Off Course: National Marine Planning Without Legal Authority to Preserve Marine Resources*, 23 N.Y.U. ENVTL. L.J. 1 (2015).

- Panjabi, Raneen Khooshie Lal, *For Trinkets, Tonics, and Terrorism: International Wildlife Poaching in the Twenty-First Century*, 43 GA. J. INT'L & COMP. L. 1 (2014).

TOXIC SUBSTANCES

- Mahoney, Michael, *Perpetuating the Cycle: The Failure of APHIS and EPA to Consider the Cumulative Impact of Pairing Herbicides With Herbicide-Resistant Crops*, 40 COLUM. J. ENVTL. L. 183 (2015).

WATER

- Connor, Michael L., *Expanding the Watershed: Certainty and Sustainability in the Twenty-First Century*, 26 COLO. NAT. RESOURCES, ENERGY & ENVTL. L. REV. 277 (2015).
- Eckstein, Gabriel, *Drugs on Tap: Managing Pharmaceuticals in Our Nation's Waters*, 23 N.Y.U. ENVTL. L.J. 37 (2015).
- Frink, Russell, *Preserving Trans-Boundary Aquifers: A Precious Resource for Our Future Generations*, 26 PAC. MCGEORGE GLOBAL BUS. & DEV. L.J. 503 (2013).
- Perona, John J., *A Dry Century in California: Climate Change, Groundwater, and a Science-Based Approach for Preserving the Unseen Commons*, 45 ENVTL. L. 641 (2015).

WILDLIFE

- Camacho, Alejandro E., *Going the Way of the Dodo: De-Extinction, Dualisms, and Reframing Conservation*, 46 ELR 10701 (Aug. 2016).

TOPICAL INDEX

AIR

Environment Texas Citizens Lobby v. ExxonMobil Corp., No. 15-20030, 46 ELR 20200 (5th Cir. May 27, 2016) 10715

Nucor Steel-Arkansas v. Big River Steel, LLC, No. 15-1615, 46 ELR 20109 (8th Cir. June 8, 2016) 10715

Sierra Club v. United States Environmental Protection Agency, No. 10-cv-01541, 46 ELR 20113 (D.D.C. June 14, 2016) 10715

United States v. Sawyer, No. 15-5181, 46 ELR 20108 (6th Cir. June 3, 2016) 10715

Utah Physicians for a Healthy Environment v. Kennecott Utah Copper LLC, No. 2:11-cv-01181, 46 ELR 20107 (D. Utah June 8, 2016) 10715

ENERGY

Article: Non-Transmission Alternatives 10688

Comment: Considering Non-Transmission Alternatives 10695

Comment: Non-Transmission Alternatives, Distributed Energy Resources, and a Multi-Directional Grid 10698

Dewey Home & Investment Properties, LLC v. Delaware Riverkeeper Network, No. 15-10393, 46 ELR 20201 (Pa. Ct. Com. Pl. May 25, 2016) . . . 10715

EQT Production Co. v. Wender, No. 2:16-cv-00290, 46 ELR 20110 (S.D. W. Va. June 10, 2016) 10715

Oregon Natural Desert Ass'n v. Jewell, No. 13-36078, 46 ELR 20204 (9th Cir. May 27, 2016) . . . 10715

Protect Our Communities Foundation v. Jewell, Nos. 14-55666, -55842, 46 ELR 20106 (9th Cir. June 7, 2016) 10715

Wyoming v. United States Department of Interior, Nos. 2:15-CV-043, -041, 46 ELR 20114 (D. Wyo. June 21, 2016) 10715

GOVERNANCE

Article: Cost-Benefit Analysis as a Commitment Device 10706

Article: The Permit Power Revisited: The Theory and Practice of Regulatory Permits in the Administrative State 10651

Article: Rethinking Health-Based Environmental Standards and Cost-Benefit Analysis 10674

Comment: Comment on *The Permit Power Revisited: The Theory and Practice of Regulatory Permits in the Administrative State* 10658

Comment: General Permits: An Environmental Minefield 10668

Comment: Permitting and Innovation in the Digital Age 10662

Comment: Rethinking *Rethinking Health-Based Environmental Standards and Cost-Benefit Analysis: A Solution in Search of a Problem?* 10681

Comment: Trends in Environmental Law Scholarship 2008-2015 10647

Comment: What Appears Obvious Is Not Necessarily So 10685

WASTE

New York v. U.S. Nuclear Regulatory Commission, No. 14-1210, 46 ELR 20105 (D.C. Cir. June 3, 2016) 10715

WATER

Coyote Lake Ranch, LLC v. Lubbock, City of, No. 14-0572, 46 ELR 20203 (Tex. May 27, 2016) 10716

Duarte Nursery, Inc. v. United States Army Corps of Engineers, No. 2:13-cv-02095, 46 ELR 20111 (E.D. Cal. June 10, 2016) 10716

State v. Atlantic Richfield Co., No. 2015-201, 46 ELR 20099 (Vt. May 27, 2016) 10716

United States Army Corps of Engineers v. Hawkes Co., No. 15-290, 46 ELR 20202 (U.S. May 31, 2016) 10716

WILDLIFE

Article: Going the Way of the Dodo: De-Extinction, Dualisms, and Reframing Conservation 10701

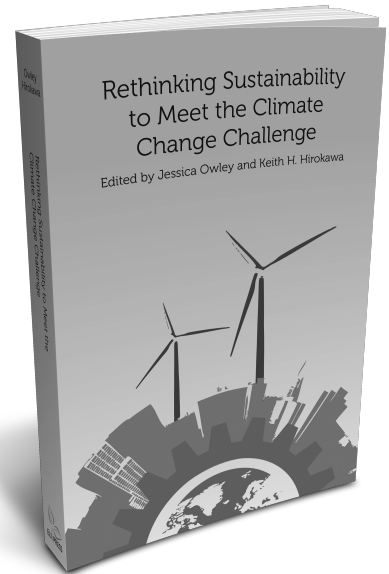
New Mexico Department of Game & Fish v. United States Department of Interior, No. CV 16-00462, 46 ELR 20112 (D.N.M. June 10, 2016) 10716

Rethinking Sustainability to Meet the Climate Change Challenge

Edited by Jessica Owley and Keith H. Hirokawa

Has the concept of sustainability as we know it reached the end of its useful life? Sustainability means many things to many people, but it has been a positive driving force across all levels of society in a broad-based effort—either through laws and treaties or voluntary action—to keep our planet and our people healthy. But none of those efforts have managed to prevent climate change. It's a reality that's here to stay, and it's bigger than we would have imagined even 20 years ago.

This collection of essays from experts in the field articulates a wide range of thoughtful ways in which conceptions of sustainability need to be reexamined, refined, or articulated in greater detail to address the climate challenge. As the editors note, one of the main challenges is the need for a better understanding of the issues at the intersection of sustainability and climate change and developing the proper means of communicating them. This important work takes critical steps toward reimagining sustainability in the era of climate change.



About the Editors

Jessica Owley is an associate professor of environmental law, federal Indian law, property, and land conservation at the SUNY Buffalo Law School.

Keith Hirokawa is an associate professor at Albany Law School, where he teaches courses involving environmental and natural resources law, land use planning, property law, and jurisprudence.

Review

"There is no better critique of sustainable development in print today than these 14 essays by scholars of the Environmental Law Collaborative. Their discerning insights expose inadequacies inherent in how the diverse and competing concepts of sustainable development can cope with climate disruptions. Has the law and policy associated with sustainable development become a maladaptation, increasing socioeconomic and ecological vulnerability? The work is provocative and timely. Profs. Owley and Hirokawa have deftly edited a well-annotated book that is essential in assessing whether sustainable development can address—or survive—the problems of climate disruption."

—**Nicholas A. Robinson, Gilbert & Sarah Kerlin Professor of Environmental Law Emeritus, Pace University School of Law**



ISBN: 978-1-58576-173-9 | Price \$35.95
ELI members receive a 15% discount on all ELI Press and West Academic publications.
To order, call **1(800) 313-WEST**,
or visit www.eli.org or westacademic.com.



1730 M STREET, NW, SUITE 700
WASHINGTON, DC 20036

Non-profit Org.
US POSTAGE
PAID
Permit 8102
Washington, DC



"One reason that ELI is so effective is that it consistently works to involve professionals from all sectors, viewpoints, and communities."

Tom Udall
U.S. Senator
Washington, DC

BECOME AN ELI ASSOCIATE MEMBER

Student memberships are free! Non-student rates start at only \$80.

Join today and begin receiving your benefits!

www.eli.org/membership/index.cfm