TEXAS ENVIRONMENTAL LAW JOURNAL

Vol. 54, No. 1 Spring 2024 Pages 1 to 205

ARTICLES

WILLFUL WISDOM: HARNESSING INSIGHTS FROM DECISION SCIENCE TOWARD WISER DECISION MAKING ON CLIMATE CHANGE AND ENERGY TRANSITION
Nathan Block 1

DEATH WATCH: THE LEGISLATIVE END OF SYNDICATED CONSERVATION EASEMENTS
Beckett Cantley & Geoffrey Dietrich 36

A PROMISE MADE IS NOT A PROMISE KEPT: SCALING VOLUNTARY CARBON MARKETS ACCOUNTABILITY WITH FEDERAL AGENCY COLLABORATION
Nicholas Espenan 66

NOTES

TALKING TRASH: WHY THE UNITED STATES NEEDS TO DO MORE TO REDUCE AQUATIC TRASH
Klara Henry 120

JUDICIAL REVIEW OF AGENCY ACTIONS: A GAP IN THE TEXAS APA AND ITS EFFECT ON ENVIRONMENTAL LITIGATION
Chloe Gossett 145

INSECTS AS FOOD: REGULATORY BARRIERS TO CONSUMING THE FOOD OF THE FUTURE
Eleanor Withers 175

DEVELOPMENTS

available at https://www/texenrls.org/Texas-environmental-law-journal/

NATURAL RESOURCES – *Francesca Eick, Julie Molina*
RECENT DECISIONS – *Joshua Katz, Alex Montellano*
UTILITIES – *Paul Sarahan, Nikiya Mellon*
WASTE – *Amanda Halter, Eric Trimble*
WATER RIGHTS – *Kimberly Kelley, Tiph Kugener*
WATER QUALITY – *Alisha Adams, Kevin Sorstokke*

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The purpose of the *Texas Environmental Law Journal* is to provide members of the Environmental and Natural Resources Law Section of the State Bar of Texas and the public with legal articles and recent development columns on relevant environmental and natural resources law issues. The *Journal* also provides news of Section activities and other events pertaining to this area of law. The *Journal* is the leading source for articles on Texas environmental and natural resources law.

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CORRECTION: VOLUME 53-2

The cover page of Volume 53-2 mistakenly identified the issue as the Fall 2024 issue. Volume 53-2 is the Fall 2023 issue. The journal regrets the error.

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Willful Wisdom: Harnessing Insights from Decision Science Toward Wiser Decision Making on Climate Change and Energy Transition

By Nathan Block

I. Limited in a Limitless World....3

II. The Case for Teaching Wisdom....6

A. On Teaching Wisdom....9

III. Foundations for Willful Wisdom....11

A. Intellectual Humility....11

B. Legal Education is No Inoculation....14

C. Managing Innumeracy....16

D. Critical Thinking....18

IV. Finding Help Being Rational: Decision Science....19

A. The Long View....22

B. Forecasting, Confidence, and Calibration....23

C. Decision Support Specific to Climate: IPCC Documents....25

V. Accounting For Ethics....26

A. Decision Quality and Ethics....27

B. Dignity....28

C. Not Empathy....30

D. Changing Minds and Galvanizing Action....31

E. Compromise....32

VI. Conclusion....34

The only thing that can save us as a species is seeing how we're not thinking about future generations in the way that we live. – Erik Erikson[1]

It is time to start teaching lawyers to be wise decision-makers.

Challenges of broad scope and immense complexity face the world today, and they are characterized by substantial uncertainty and enormous potential impacts. A particular challenge—responding to global climate change and orchestrating an efficient, effective energy transition—is loaded with incredible potential if managed successfully. And if not, climate change risks unmitigable disasters. Because lawyers are so vital to the legal, regulatory, business, and political systems involved in responding to climate and facilitating the energy transition, this article focuses on lawyers and legal education. In *Tomorrow's Lawyers*, Richard Susskind notes that, "[i]n many law schools, in terms of content, the law is taught much as it was in the 1970s [with] scant attention paid . . . to phenomena such as globalization, commoditization, technology, business management, risk assessment, decomposing and alternative sourcing."[2] Ultimately, he suggests that many legal graduates are leaving school not well prepared for their careers and "wholly ill-equipped for tomorrow."[3]

Effectively addressing climate change and facilitating a rapid and ethical energy transition requires not just better decisions, but *wiser* decisions—decisions that better

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1 Daniel Goleman, Erikson, in His Own Old Age, Expands His View of Life, N.Y. TIMES, June 14, 1988, at C1.

2 RICHARD SUSSKIND, TOMORROW'S LAWYERS: AN INTRODUCTION TO YOUR FUTURE 225 (3rd ed. 2023).

3 *Id.*

account for the broad range of considerations inherent in the world's energy use. Lawyers, current and future, need better preparation and equipment for that tomorrow. Since the 1950s, the understanding of human decision-making has greatly expanded. Insights into individual and group motivations have become substantially more sophisticated through work in neuroscience, psychology, and economics. Moreover, a scientific study of wisdom has emerged and is providing educational models and practical tools that can promote wiser decisions. Making higher-quality, more ethical, and wiser decisions affecting the future of the planet is of such import that it is time to fulsomely integrate the insights of these sciences into the education of both practicing lawyers and law students. As the breadth and consequence of our decisions expand, so too should our education for making them.

I. LIMITED IN A LIMITLESS WORLD

In 1989, Robert Ornstein and Paul Ehrlich published *New World New Mind: A Brilliantly Original Guide to Changing the Way We Think About the Future*, in which they asserted that the human mind had evolved to meet immediate, relatively simple—although often existential—threats.[4] The world humans have since made is vastly different.

> All nonhuman species evolved to fit into their physical habitats and people originally evolved to do this as well. Human beings, however, have changed the world more in the last ten thousand years than their ancestors did in the preceding 4 million. Much more than any other species, we have turned the table on the physical environment and made it change to fit us. . . . Human inventiveness has created problems because *human judgment and humanity's ability to deal with the consequences of its creations lags behind its ability to create*.[5]

The modern world is one of large-scale, broadly diffuse, and remote threats. Today,

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4 ROBERT ORNSTEIN & PAUL EHRLICH, NEW WORLD NEW MIND: A BRILLIANTLY ORIGINAL GUIDE TO CHANGING THE WAY WE THINK ABOUT THE FUTURE 8–10 (1989).

5 *Id.* at 9–10.

the reality of climate change and the resulting necessity for an energy transition, along with the promises and perils of artificial intelligence, compete for attention and resources in a "new normal" of global pandemic and near-constant geopolitical instability. These issues are vast and immensely complex with implications that no one person can fully grasp. Nevertheless, society must face them, and must do it with the tools available. These tools will be imperfect because "[t]he same mental routines that originally signaled abrupt physical changes in the old world are now pressed into service to perceive and decide about unprecedented dangers in the new."[6] In Ornstein and Ehrlich's words, "[t]he world that made us is now gone, and the world we made is a new world, one that we have developed little capacity to comprehend."[7]

There is no better example of the phenomenon described by Ornstein and Ehrlich than climate change. It is now eighty-five years since Guy Callendar discovered that Earth was warming and first hypothesized that industry's emissions were responsible.[8] It has been thirty-three years since the first U.N. Intergovernmental Panel on Climate Change (IPCC) assessment was published asserting a conclusive link between human caused emissions and climate warming.[9] The fifth IPCC assessment painted a compelling picture that the science underpinning warming findings is increasingly focused while the global community's efforts are starting to fall behind:

> Adaptation planning and implementation has progressed across all sectors

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6 *Id.* at 11 (emphasis omitted).

7 *Id.* at 8.

8 Zoe Applegate, *Guy Stewart Callendar: Global Warming Discovery Marked*, BBC (Apr. 26, 2013), https://www.bbc.com/news/uk-england-norfolk-22283372.

9 *A Brief History of Climate Change Discovery*, U.K. RSCH. & INNOVATION, https://www.discover.ukri.org/a-brief-history-of-climate-change-discoveries/index.html#:~:text=1994%20%2D%20First%20climate%20change%20legislation%20comes%20into%20force&text=The%20United%20Nations%20Framework%20Convention,been%20ratified%20by%20197%20countries (last visited Nov. 2, 2023).

> and regions, with documented benefits and varying effectiveness. Despite progress, adaptation gaps exist, and will continue to grow at current rates of implementation. Hard and soft limits to adaptation have been reached in some ecosystems and regions. Maladaptation is happening in some sectors and regions. Current global financial flows for adaptation are insufficient for, and constrain implementation of, adaptation options, especially in developing countries.[10] Continued greenhouse gas emissions will lead to increasing global warming, with the best estimate of reaching 1.5°C in the near term in considered scenarios and modelled pathways. Every increment of global warming will intensify multiple and concurrent hazards (high confidence).[11]

Despite those findings, polling shows that only "about half (49%) of Americans believe climate change is mostly caused by human activity, unchanged from 2017 and 2018."[12] One Pew Research Center poll showed that 69% of Americans "favored the U.S. taking steps to become carbon neutral by 2050."[13] Even with that expressed support, only 37% believed climate change should be a top priority of the country, and even fewer people show a significant willingness to change personal patterns.[14] The poll also showed that views diverge significantly based on party affiliation and demographics.[15]

These findings bring several of the motivations for this paper into focus. First, anthropogenic climate change is a genuine threat with the potential to substantially disrupt ecosystems and, in turn, the function and organization of human society. Second, the current pace of carbon reduction on a path to net zero is not moving fast enough. While

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10 INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2023: SYNTHESIS REPORT 8 (Core Writing Team & Hoesung Lee et al. eds., 2023).

11 *Id.* at 12.

12 Christopher Moessner & Jennifer Berg, *Many Americans Believe that Climate Change Is Mostly Caused by Human Activity, But Few Report Making Changes to Help Limit It*, IPSOS (May 4, 2023), https://www.ipsos.com/en-us/many-americans-believe-climate-change-mostly-caused-human-activity-few-report-making-changes-help.

13 Alec Tyson et al., *What the Data Says About Americans' Views of Climate Change,* PEW RSCH. CTR. (Aug. 9, 2023), https://www.pewresearch.org/short-reads/2023/08/09/what-the-data-says-about-americans-views-of-climate-change/.

14 *Id.*

15 *Id.*

this reality may ultimately be existential, opportunity still exists to avoid the worst scenarios.

> Deep, rapid, and sustained reductions in greenhouse gas emissions would lead to a discernible slowdown in global warming within around two decades, and also to discernible changes in atmospheric composition within a few years (*high confidence*).[16]

The exigency and import of the response to climate change raise the third key motivator. Given the lag in societal consensus in a response to climate change, decision makers have substantial challenges in efficiently and effectively harnessing finite resources to facilitating a rapid energy transition and mitigating climate change. Doing this will require smarter, better, wiser decisions, ones that will garner commitment to action.[17] Because of their central role as leaders in the law, policy, politics, and business that shape climate change, this paper's focus is helping lawyers improve decision-making skills by intentionally and willfully developing the practical wisdom demanded of them.

II. THE CASE FOR TEACHING WISDOM

In 1989, Ornstein and Ehrlich recognized climate change as an existential threat, one for which they prescribed "conscious evolution."[18] Stating that "[t]he human predicament requires a different kind of education and training to detect threats that materialize not in instants but in years or decades," they asserted a "need to be 'literate' in entirely new disciplines, such as probability theory and the structure of thought."[19] Most current models of education introduce subjects separately in categories like math, physical

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16 INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *supra* note 10, at 12.

17 Judith Glück & Nic M. Weststrate, *The Wisdom Researchers and the Elephant: An Integrative Model of Wise Behavior*, 26(4) PERSONALITY & SOC. PSYCH. REV. 342, 342 (2022) ("As we are faced with global challenges that require complex and balanced solutions, societies may be in urgent need of more wisdom, especially in our leaders.").

18 ORNSTEIN & EHRLICH, *supra* note 4, at 12.

19 *Id.*

sciences, social sciences, economics, art, literature, and language. Rarely are these subjects taught interrelatedly. The disconnection they observed continues into post-secondary and professional education. From my own experience, it is no less true for legal education. For example, contracts, property, criminal, and constitutional law are taught as distinct subjects though they are often inextricably intertwined. What is taught even less explicitly, if at all, is the wisdom required to be an effective counselor in domains of uncertainty other than the law.

A bit of cliché and a lot of "conventional wisdom" posits that most people learn from experience and over time develop some wisdom that makes them better at navigating a complex world.[20] Some also actively seek out wisdom. But, even for the active seekers, insights are frequently gathered from a limited number of domains. It should not be this way. Scientists have learned to understand much about why people behave the way they do, why complex systems operate the way they do, how to manage uncertainty in those systems, and how to collect and process massive amounts of information.[21] This science has matured into actionable insights.

I am certainly not the first to suggest the need for teaching wisdom in service of addressing the world's wicked problems. "As we are faced with global challenges that require complex and balanced solutions, societies may be in urgent need of more wisdom, especially in our leaders. . . . Therefore, it seems worthwhile to find ways to foster wisdom both through education and by creating structures that support the manifestation of wisdom

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[20] Interestingly, studies on wisdom have failed to find much actual association between age and wisdom. *See* Glück & Weststrate, *supra* note 17, at 347.

[21] *Id.* at 344.

in fields like politics, management, or the law."[22] So then, what is wisdom? Several models of wisdom and numerous, varying traits appear in those models.

> Many definitions of wisdom converge on recurrent elements: humility, patience, and a clear-eyed, dispassionate view of human nature and the human predicament, as well as emotional resilience, an ability to cope with adversity, and an almost philosophical acknowledgement of ambiguity and the limitations of knowledge. Like many big ideas, it [i]s also nettled with contradictions. Wisdom is based upon knowledge, but part of the physics of wisdom is shaped by uncertainty. Action is important but so is judicious inaction. Emotion is central to wisdom yet emotional detachment is indispensable.[23]

Attempting to harmonize the different definitions of wisdom or even offering a general definition of wisdom is well beyond my scope here. Rather, I draw from several models to suggest the elements most helpful to decision making by lawyers in this context. The base is formed from a cognitive-focused model grounded in "an awareness of the multiperspectival nature of complex situations, the limitations of one's own knowledge, and the unpredictability of the future."[24] To this, we must add an orientation toward a common good and a long-term, future focused perspective—generativity. Wisdom can become phronesis and translate to an ability to encounter new situations and make high quality, wise decisions.[25]

Waiting passively for wisdom is a luxury that future lawyers cannot afford. Without minimizing the wisdom collected over a lifetime of experience, or wisdom found in religion, literature, art, or philosophy, future lawyers can and should employ insights from

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22 *Id.* at 342.

23 STEPHEN S. HALL, WISDOM: FROM PHILOSOPHY TO NEUROSCIENCE 11 (2010).

24 Glück & Weststrate, *supra* note 17, at 347.

25 From classical philosophy, phronesis is a form of practical wisdom—an ability to think about what is good or bad and to act in relation to those values. In ancient Greek, phronesis meant a kind of prudence Aristotle saw as a defining characteristic of political leaders and citizens in adjudicating the ethical and political issues that affect the common good. *See Phronêsis,* UNIV. OF HOUS.: THE HONORS COLL., https://www.uh.edu/honors/Programs-Minors/honors-minors/phronesis/ (last visited Oct. 28, 2023).

behavioral economics, decisions sciences, wisdom research, and moral philosophy. The legal profession should compile this information into a functional, willful wisdom, teach it in law schools and continuing legal education, and apply it broadly. Being a good decision maker and guiding others in making good decisions requires ethics, virtues, judgment, and perspective tempered by a good dose of humility. The three-part prescription for willful wisdom is as follows:

1. **Be Intentional in Seeking Out Wisdom**: Legal education needs a genuine, yet functional, wisdom grounded in decision sciences and behavioral economics with insight from philosophy, business, math, and other sciences.
2. **Promote Skills and Mindsets for Better Decision Making**: Not all lawyers need to be able to manage complex statistical models or sophisticated decision analysis. However, society urgently needs many, many more lawyers who understand the limits of human decisionmaking and accordingly embrace greater numeracy and the tools readily available to improve the quality of our decisions.
3. **Broaden the Focus and Education of Ethics**: Better decision-making is not enough. We also must teach systems for thoughtful, ethical decisions based on rational compassion with intentional long-term thinking and concern for the consequences of decisions. We need greater generativity.

"The fields of psychology and behavioral economics provide the insights into how we engage our intelligence more fully and improve our ethical behavior."[26] This willful wisdom prescription is an effort to pull together those threads, organize them, and make them more accessible. This prescription is practicable and within our grasp.

A. ON TEACHING WISDOM

That wisdom can be taught in a classroom may be novel to some. However, considerable research and applied experience does just that. Robert J. Sternberg, a leader in wisdom research and education, has written extensively on techniques for wisdom

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[26] MAX H. BAZERMAN, BETTER NOT PERFECT: A REALIST'S GUIDE TO MAXIMUM SUSTAINABLE GOODNESS 22 (2020).

education.[27] Sternberg and his colleagues have developed three "wisdom-based thinking skills": (1) thinking reflectively, (2) thinking dialogically, and (3) thinking dialectically.[28] Thinking reflectively focuses on metacognition, and it is designed to promote awareness of values and beliefs. "Reflective thinking can enhance wise decision thinking because in order to make a wise decision, one needs to come up with a strategy, monitor how successful the chosen strategy is, and modify it if it is not successful. . . ."[29] Dialogical thinking accounts for others' perspectives and is vital to solutions to group problems. Dialectical thinking then is about integrating multiple, varying points of view.

Part of the wisdom equation is the ability to make well-framed decisions based in sound analysis. It is not yet entirely clear exactly which techniques and interventions are most effective in teaching wisdom as "there are not yet any empirically-validated programs of teaching wisdom."[30] However, "there are a sizable number of insights in the psychological literature which are pertinent to the questions of strategies fostering wisdom-related characteristics."[31] Additionally, ample literature in decision sciences validates that wisdom can be taught and learned.[32] Thinking and decision making built around such strategies, engages slower, more deliberative modes of thinking that can promote thinking reflectively, dialogically, and dialectically, thereby mitigating the biases of error-prone brains. These tools are the brick and mortar that make a willful wisdom framework

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27 *See* ROBERT J. STERNBERG ET AL., TEACHING FOR WISDOM, INTELLIGENCE, CREATIVITY AND SUCCESS 106 (2015).

28 *Id.*

29 *Id.* at 107.

30 Alex C. Huynh & Igor Grossman, *A Pathway for Wisdom-Focused Education*, 49 J. OF MORAL EDUC. 4, 12 (2020).

31 *Id.*

32 CARL SPETZLER ET AL., DECISION QUALITY: VALUE CREATION FROM BETTER BUSINESS DECISIONS 5 (2016).

imminently practical, functional, and accessible.

III. FOUNDATIONS FOR WILLFUL WISDOM

A. INTELLECTUAL HUMILITY

The foundational first step to making better decisions is accepting that every person's ability to perceive and understand the world is limited. Quite simply, there is a very real limit to what individuals can ever know or understand. People must adapt accordingly.

At the most fundamental level, people do not even have full access to reality—no one person can perceive the world completely or accurately. In *Deviate: The Creative Power of Transforming Your Perception*,[33] neuroscience professor Beau Lotto summarized this fact in four points. First, people do not sense all that there is to sense.[34] As an example, a person's eyes detect only visible light—a small slice of the electromagnetic spectrum. Second and third, the information people do get is in constant flux and highly ambiguous.[35] Fourth, there is no fixed instruction manual for what the brain should do with all that information.[36] As a result, our brains must construct meaning out of stimulus and past experience.[37] Most people can perceive and manage information well enough to navigate in a complex world. However, the limitations in the ability to perceive and manage information means that "our perception is much more plastic and subject to influence than we're often aware of or comfortable admitting."[38] It can be a bit distressing to consider but neuroscience is bringing focus to the reality that it's a myth "that we 'know what we know'

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33 BEAU LOTTO, DEVIATE: THE CREATIVE POWER OF TRANSFORMING YOUR PERCEPTION (2018).
34 *Id.*
35 *Id.* at 54, 56.
36 *Id.* at 59.
37 *Id.* at 66.
38 *Id.* at 13.

by conscious deliberation."[39] In fact, "[c]ertainty and a similar state of 'knowing what we know' arise out of involuntary brain mechanisms that, like love or anger function independently of reason."[40]

Further, even when humans seek to be rational decision makers, their rationality is limited, a concept called bounded rationality. Rationality is constrained by the complexity of an issue, someone's ability to process information, and the time available to make a decision.[41] So, "while we try to be rational, we face cognitive limitations on our ability to get there."[42] One of the challenges bounding our rationality is the ever-increasing volume and richness of information available.

> In 2011, you consumed about five times as much information per day as you would have just a quarter century earlier. As of 1950, it took about fifty years for knowledge in medicine to double. By 1980, medical knowledge was doubling every seven years and by 2010, it was doubling in half that time.[43]

The amount of information available to someone is staggering, even within a single discipline. One resource that ranks scientific journals identified 107 journals relevant to climate change.[44] A ranking of "flagship" U.S. law reviews identifies 192 publications, without including specialized journals.[45] Even when specializing, staying on top of any

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39 ROBERT A. BURTON, ON BEING CERTAIN: BELIEVING YOU ARE RIGHT EVEN WHEN YOU'RE NOT xiii (St. Martin's Press, 2008).

40 *Id.*

41 *See Bounded Rationality,* STANFORD ENCYC. OF PHIL. (Nov. 30, 2018), https://plato.stanford.edu/entries/bounded-rationality/#DescPresNormStan (detailing background information on bounded rationality, a complex topic spanning several domains of psychology and behavioral economics).

42 BAZERMAN, *supra* note 26, at 11.

43 ADAM GRANT, THINK AGAIN: THE POWER OF KNOWING WHAT YOU DON'T KNOW 17 (2021).

44 *Ranking for Journals on Global and Planetary Change*, SCIMAGOJR, https://www.scimagojr.com/journalrank.php?category=2306&page=1&total_size=107 (last visited Nov. 2, 2023).

45 Bryce Clayton Newell, *Meta-Ranking of Flagship US Law Reviews (2023 Edition)*, U. OREGON: BLOG, https://blogs.uoregon.edu/bcnewell/meta-ranking/ (last visited Nov. 2, 2023).

given field is challenging. Being a true polymath in the style of the Renaissance masters is a vastly higher mountain to climb in 2023 than it was in 1523.

Another major limit to the ability to make rational decisions is the brain itself. Many people were taught that humans are rational economic decision makers, and economic theorists termed this idealized decision maker *homo economicus*.[46] While humans are certainly capable of rationality, modern behavioral economics has repeatedly shown that people are burdened with a multitude of biases and heuristics that push against rationality.[47] Biases distort rationality by pushing people toward decisions that feel familiar, comfortable, and advantageous. Heuristics are simple thought processes that help "find adequate, though often imperfect, answers to difficult questions."[48] Biases and heuristics are not bugs, but features, of our brains' evolution to our environment. "We compress complex reality down into abbreviated heuristics that often work beautifully in everyday life for high-frequency, low-significance decisions."[49]

The path of human progress makes it clear that despite limitations, people have immense capability. Humans can be reasonable, perfectly functional members of society and still make many sub-optimal decisions. Increase the complexity of those decisions,

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46 Richard C. Wilson, *Homo Ecomicus: Meaning, Overview, and Criticisms*, INVESTOPEDIA, https://www.investopedia.com/ask/answers/08/homo-economicus.asp#:~:text=Homo%20economicus%2C%20or%20%22economic%20man,work%20by%20using%20rational%20judgment (last updated Aug. 20, 2023).

47 *See* Thomas J. Horton, *The Coming Extinction of Homo Economicus and the Eclipse of the Chicago School of Antitrust: Applying Evolutionary Biology to Structural and Behavioral Antitrust Analysis*, 42 LOY. U. CHI. L.J. 469, 474–75 (2011) ("In treating *Homo economicus* as a rational self-interested utility and profit maximizer, neoclassical economists have gone against the most basic principles of humanness, and our attendant inborn and cultural standards of reciprocity, justice, and fairness."); STEPHEN S. HALL, WISDOM: FROM PHILOSOPHY TO NEUROSCIENCE 207 (2010) ("[A]lthough *Homo economicus* insists by definition on a narrow and material definition of 'preference,' *Homo sapiens* ultimately juggle a much more complicated set of values.").

48 DANIEL KAHNEMAN, THINKING, FAST AND SLOW 98 (2011).

49 STEVEN JOHNSON, FARSIGHTED: HOW WE MAKE THE DECISIONS THAT MATTER MOST 33 (2018).

particularly without leveraging assistance from analytical tools or peer support, and the risk of sub-optimal outcomes increases. So, recognizing these limitations should not be demotivating. Rather, "[r]esearch on intellectual humility offers an intriguing avenue to safeguard against human errors and biases. Although it cannot eliminate them entirely, recognizing the limitations of knowledge might help buffer people from some of their more authoritarian, dogmatic, and biased proclivities."[50] While there are varying conceptions of intellectual humility, one that views it as multidimensional, composed of the meta-cognitive ability to acknowledge our epistemic limits, and having a desire to seek truth is most useful here. Importantly, "fostering intellectual humility calls for societal change in educational, scientific and business cultures: away from treating intellectual humility as weakness and towards treating it as a core value that is celebrated and reinforced."[51]

B. LEGAL EDUCATION IS NO INOCULATION

Lawyers sell a kind of expert judgement—an ability to understand the law in context and apply the law to facts. Even so, lawyers can use help being better decisionmakers. Empirical studies demonstrate that a legal education does not insulate lawyers from cognitive biases, logical fallacies, or the quagmire of innumeracy.[52] Further, raw intelligence can be part of the problem. Studies have suggested that people with higher IQs can more easily fall victim to stereotypes because they more quickly recognize patterns.[53] Perhaps more troubling, "[t]he brighter you are, the harder it can be to see your

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50 Tenelle Porter et. al, *Predictors and Consequences of Intellectual Humility*, 1 NATURE REV. PSYCH. 524, 524 (2022).

51 *Id.* at 533.

52 *See* James H. Stark & Maxim Milyavsky, *Towards a Better Understanding of Lawyers' Judgmental Biases in Client Representation: The Role of Need for Cognitive Closure*, 59 WASH. UNIV. J. L. & POL'Y 173 (2019).

53 GRANT, *supra* note 43, at 24.

own limitations."[54]

Some lawyer-specific examples help make this point. One study has shown that lawyer predictions of case outcomes are impacted by something as simple as the amount of detail used to describe a problem.[55] That is, estimated outcomes and resulting recommendations on whether to settle a case moved substantially when the lawyer was told to assume they would have a problem proving duty, breach and causation, the individual elements of liability, instead of just assuming a problem proving "liability."[56] Another study looked at lawyers' forecasts of trial outcomes and their confidence in those forecasts. In this study, the actual outcomes of a trial were compared to the lawyers' forecasts. Lawyers were overconfident in their estimates.[57] Techniques intended to debias the individual did not do much.[58] Studies pointed to more sophisticated interventions such as third-party reviews and specific training in tracking and calibration of forecasts as sources of improvement.[59] In my experience as a practitioner and adjunct law professor, I have found that few of my peers and virtually none of my students are fluent in these techniques. Finally, other scholars have noted:

> [N]otwithstanding its enormous importance to the practice of law (and notwithstanding the handsome legal fees it commands), outcome prediction in the law remains a very imprecise endeavor. . . . The reason for this inaccuracy is that the three principal tools lawyers have traditionally relied on to facilitate outcome predictions--legal analysis, lawyerly experience, and the use of certain types of empirical information (e.g., jury verdict reporters) are all subject to significant

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54 *Id.* at 25.
55 Craig R. Fox & Richard Birke, *Forecasting Trial Outcomes: Lawyers Assign Higher Probability to Possibilities That Are Described in Greater Detail*, 26 L. HUM. BEHAV. 159, 160 (2002).
56 *Id.* at 167.
57 Jane Goodman-Delahunty et. al., *Insightful or Wishful: Lawyers' Ability to Predict Case Outcomes*, 16 PSYCHOL., PUB. POL'Y, & L. 133, 144 (2010).
58 *Id.* at 151.
59 *Id.* at 144.

problems and limitations.[60]

These authors ultimately conclude that outcome prediction by lawyers can improve the most by levering data science and predictive analytics that, "will increasingly emerge as an important supplemental tool that should help make outcome prediction more accurate."[61] Legal education may help, but it does not inoculate lawyers from failures in predictions. Acknowledging the shortcomings of the legal education requires a good bit of humility, but lawyers can gain substantial value and wisdom by better balancing the traditional tools of the legal education and the widespread benefits of using tools to support better decision making.

C. MANAGING INNUMERACY

Chief Justice John Roberts once quipped, "I think there are a lot of people who go to law school because they are not good at math and can't think of anything else to do."[62] In my nearly twenty-five years in practice, I have heard some version of this so many times I have come to believe it cliché. But to tackle increasingly complex problems like climate change—problems with vast scientific, economic, and sociological considerations—the industry must banish this notion. Seriously, cut it out. Legal education should not be expected to teach sophisticated statistical modeling. However, more of the profession must effectively engage with the concepts required for fulsome, high-quality analysis in support of wise decisions. An effective lawyer does not need every answer immediately at hand. Rather, effective lawyers need to recognize when to seek additional expertise and have a

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60 Mark K. Osbeck, *Lawyer as Soothsayer: Exploring the Important Role of Outcome Prediction in the Practice of Law*, 123 PENN ST. L. REV. 41, 44 (2018).

61 *Id.* at 102.

62 Rice U., *Centennial Lecture Series: Chief Justice John Roberts Speaks at Rice University*, YOUTUBE (Oct. 26, 2012), https://www.youtube.com/watch?v=UxaFhJ8JVq8 [https://perma.cc/4CAJ-UXQJ].

mature sense of which tools to use based on why and how they can improve the ultimate output. Numeracy is key to that understanding and is a particular problem in need of improvement.

"Numeracy is defined as the ability to process basic probability and numerical concepts. Making good decisions in the real world requires some numerical ability."[63] Some important decision-making challenges, such as framing effects, are related to innumeracy.[64] One result of innumeracy is the inability to accurately understand and rationally deal with risk. For example, one researcher has posited that an inability to properly understand the probabilities of highly unlikely but high consequence events "results in misinformed government policies, confused personal decisions and an increased susceptibility to pseudoscience."[65] Conversely, greater numeracy has been associated with a reduction in a person's susceptibility to framing effects and reducing the power of nonnumerical, often emotional information.[66]

In confronting climate change, virtually every decision involves numbers—from calculations of the social cost of carbon to the acres of land impacted by a particular policy. Decisionmakers who are highly numerate "make better decisions than the less numerate when numbers are involved; they also respond more consistently than less numerate individuals across normatively equivalent formats."[67] Plenty of resources are available to simply explain complex concepts and to help with understanding concepts like

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63 Ellen Peters et al., *Numeracy and Decision Making*, 17 PSYCH. SCI. NO. 5, 407, 407 (2006).

64 Framing effects are a type of cognitive bias whereby people react differently to a decision depending on whether presentation is positive or negative.

65 Peters et al., *supra* note 63, at 407.

66 Ellen Peters, *Beyond Comprehension: The Role of Numeracy in Judgments and Decisions*, 21(1) CURRENT DIRECTIONS IN PSYCH. SCI. 31, 31 (2012).

67 *Id.* at 33.

probability.[68] One such resource is Jordan Ellenberg's *How to Not Be Wrong: The Power of Mathematical Thinking*, in which he offers this encouraging observation:

> What's true is that the sensation of mathematical understanding—of suddenly knowing what's going on, with total certainty, all the way to the bottom—is a special thing, attainable in few if any other places in life. . . . The lessons of mathematics are simple ones and there are no numbers in them: that there is structure in the world; that we can hope to understand some of it and not just gape at what our senses present us; that our intuition is stronger with a formal exoskeleton than without one.[69]

Being really good at numerical analysis can be a double-edged sword. When the data begins to clash with a firmly held belief, "math prowess is no longer an asset, it becomes a liability. The better you are at crunching numbers, the more spectacularly you fail at analyzing patterns that contradict your views."[70] Nevertheless, education can lead to long-term positive effects with greater numeracy improving risk perception and decisionmaking. Law school and lawyer education will not be a quick fix. However, improved numeracy and more effectively using tools to support more numerate decision making will help lawyers be better partners in climate change policy and promoting the energy transition.

D. CRITICAL THINKING

Critical thinking is a fundamental skill for good decision making. "A public without basic bullshit detection and disposal skills cannot defend itself against the many unwanted effects of bullshit."[71] There is general agreement that critical thinking comprises "at least the abilities of inference and evaluation, as well as analysis, interpretation, explanation and

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68 *See generally* CHARLES WHEELEN, NAKED STATISTICS: STRIPPING THE DREAD FROM THE DATA (2013).
69 JORDAN ELLENBERG, HOW TO NOT BE WRONG: THE POWER OF MATHEMATICAL THINKING 436–37 (2015).
70 GRANT, *supra* note 43, at 25.
71 JOHN V. PETROCCELLI, THE LIFE-CHANGING SCIENCE OF DETECTING BULLSHIT 10–11 (2021).

self-regulation."[72] Addressing climate change is a topic that mandates critical thinking.[73]

Given the role of lawyers in society, the value of critical thinking to "thinking like a lawyer" is indisputable. Because critical thinking is the foundation of decisionmaking and ultimately then wisdom, legal education, at all levels, should support critical thinking. However, the current state of the world and evolution of the profession do appear to necessitate more curriculum focusing on critical thinking.

The legal profession should incorporate approaches of scientific reasoning and the scientific method to problem-solving strategies. "Scientific reasoning and critical thinking are the very best tools we have for finding truth and gaining wisdom and fundamental understanding."[74] The most focused text I have found to help lawyers with these specific skills is Randal Kiser's *Beyond Right and Wrong: The Power of Effective Decision Making for Attorneys and Clients*.[75] Building law school curricula around the book is worthy of thoughtful consideration. It can readily serve as a textbook and bridge basic critical thinking to yeoman level decision-making sophistication including applications of decision quality and decision analysis. While teaching thinking based in the scientific method may seem a bit out of place in legal education, the scientific method provides a "powerful analytical tool that'll serve us well when confronted with a wide range of problems."[76]

IV. FINDING HELP BEING RATIONAL: DECISION SCIENCE

At an intersection of applied mathematics, behavioral economics, and management

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72 JONATHAN HEARD ET. AL., CRITICAL THINKING: DEFINITION AND STRUCTURE 2 (2020) (citation omitted).

73 *See* JOHN GRANT, BULLSHIT: HOW TO DETECT JUNK SCIENCE, BOGUS CLAIMS, WACKY THEORIES, AND GENERAL HUMAN STUPIDITY 183–218 (2014).

74 PETROCELLI, *supra* note 71, at 70.

75 *See generally* RANDAL KISER, BEYOND RIGHT AND WRONG: THE POWER OF EFFECTIVE DECISION MAKING FOR ATTORNEYS AND CLIENTS (2010).

76 PETROCELLI, *supra* note 71, at 70.

emerges the inter-disciplinary field of decision theory (decision science). "Decision theory is a normative philosophy that provides the rules for rational thought for people to get the most of what they truly want in the face of uncertainty."[77] In *Farsighted: How We Make the Decisions that Matter the Most*, Steven Johnson queries, "[a]re there more important skills than the ability to make hard choices?"[78] In answering, he says, "I can think of few rivals . . . It is at the very heart of what we mean when we use words like 'wisdom.'"[79] Speaking then of decision science, he writes:

> [T]he field is a sort of intellectual chameleon: it plays well in a highbrow context and in a pragmatic one. There's a deep well of philosophical literature and a growing body of neuroscience research that wrestle with the problem, but it's a problem with immediate practical utility for everyone. Who doesn't want to make better choices?[80]

By using the normative understanding of decision making derived from these disciplines, a set of prescriptive approaches to improving decision making has evolved. There are two major branches: Decision Analysis (DA) and Decision Quality (DQ). DA is a discipline that uses the insights of behavioral economics along with a variety of structured analytical tools to optimize decisionmaking. DA tools tend to be quantitative and range from relatively simple (such as influence diagrams and decision trees) all the way to sophisticated statistical modeling (e.g., Monte Carlo simulation) and other advanced analytics.[81] DA supports optimal decisions, particularly economic rationality in decision-making, by helping maximize utility. Numerous DA tools have been adopted and imbedded

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77 SPETZLER, *supra* note 32, at xvi.
78 JOHNSON, *supra* note 49, at 213–14.
79 *Id.* at 214.
80 *Id.*
81 *See generally* MARJORIE AARON CORMAN, RISK & RIGOR: A LAWYER'S GUIDE TO DECISION TREES FOR ASSESSING CASES AND ADVISING CLIENTS (2019) (explaining how decision trees are helpful in both framing and analyzing legal decisions).

in decisions related to oil and gas investment, pharmaceutical research investment, and in various other business and engineering disciplines.

DQ is an outgrowth of formal decision analysis study led by Professors Ron Howard of Stanford and Howard Raiffa of Harvard.[82] By combining the principles of DA with insights into how humans make decisions flowing from behavioral economics, the DA framework was developed to "help organizations deal effectively and efficiently with the practical challenges of complex decisions."[83] Although training may be helpful for fully utilizing DA and DQ, both have broad reach and applicability, even to lawyers. For example, Prof. Raiffa's work extended to applications of decisions sciences to negotiation. Raiffa is the author of *The Art and Science of Negotiation* and *Negotiation Analysis,* and his influence appears in the work of many negotiation scholars.[84]

"The human mind is not wired to achieve decision quality without a systematic effort."[85] The most accessible, and arguably most valuable, tool for advancing a willful wisdom and developing better decision-making is DQ. DQ application provides a clear and accessible framework for the kind of organized effort that improves decisionmaking. It begins by breaking all decision making into six component pieces required to reach "a good decision: (1) an appropriate frame, (2) creative alternatives, (3) relevant and reliable information, (4) clear values and trade-offs, (5) sound reasoning, and (6) a commitment to action."[86] Although these concepts sound like common sense, it does take some time and effort to apply them well. For example, appropriately framing a problem and making sure

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82 SPETZLER, *supra* note 32, at xiii.
83 *Id.* at xvi.
84 *See id.*
85 *Id.* at 18.
86 *Id.* at 11.

to ask the right questions is often best done as an iterative process with others involved. DQ's promoters argue that those who develop good DQ skills become more sophisticated consumers of other decision support, facilitation, and more advanced decision analysis tools.[87]

A. THE LONG VIEW

The definition of wisdom and the notion of generativity used here require any decision-making process to take a long view of the consequences of the decision contemplated. The DQ model is a powerful tool that helps clarify a longer-term view with several elements of the model providing opportunity and support to sharpen that lens. In framing a decision question, a decision maker should expressly consider the timeframe of a decision's impact. In the context of climate, clarifying desired outcomes and necessary trade-offs to obtain that outcome can focus the decision process on the ethics of the decision. This process is very accessible and can be used in situations with varying degrees of complexity. DQ can also help mitigate pitfalls of decision making—ranging from problems with individual perception to group think. Application of these tools does not guarantee a wise decision but does improve the prospect of it.

Scenario planning is another tool that builds a set of possible outcomes for how the scenarios may be resolved. The scenario planner must make intentional choices about the timeframe for the scenarios, but this intentionality can expand the focus of a decision process. "Scenario planning is genuinely not intended to be consulted for accurate forecasts of future events."[88] However, "the very act of trying to imagine alternatives to the

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87 *Id.* at 5.

88 JOHNSON, *supra* note 49, at 114.

conventional view helps you perceive your options more clearly."[89] Scenario planning builds narratives around potential outcomes and can "expose assumptions that would otherwise remain implicit."[90] Over time, "[a] sustained scenario practice can make leaders comfortable with the ambiguity of an open future."[91] This tool can support wisdom and generativity, both in forcing a longer view of decision consequences and in helping decision makers deal with inherent and unavoidable uncertainty—both desired traits of wisdom from the working frame described above.

Framework Foresight provides a system for developing a view of the future in a domain and then exploring its implications.[92] Framework foresight is not expressly a tool for making specific decisions, but it can be immensely useful to forecast how potential decisions and their consequences will interact with possible futures. It has taken decades of academic research to develop Framework Foresight and it now has practical applications that users can learn in a relatively short time.[93]

B. FORECASTING, CONFIDENCE, AND CALIBRATION

Forecasting researchers Philip Tetlock and Dan Gardner quipped in their work *Superforecasting* that most "experts" did no better than dart-throwing chimps when evaluating political forecasts.[94] Tetlock came to call these experts "hedgehogs."[95] They

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89 *Id.*

90 Angela Wilkinson & Roland Kupers, *Living in the Futures*, HARV. BUS. REV. (May 2013), https://hbr.org/2013/05/living-in-the-futures.

91 JOHNSON, *supra* note 49, at 116.

92 *See* ANDY HINES & PETER BISHOP, THINKING ABOUT THE FUTURE: GUIDELINES FOR STRATEGIC FORECASTING 369–73 (2nd ed. 2015).

93 Technology Division at the Cullen College of Engineering, Professional & Certificate Programs, *Professional Certificate in Foresight*, UNIV. OF HOUS., https://dot.egr.uh.edu/programs/professional/fore (last visited Nov. 3, 2023).

94 PHILIP E. TETLOCK & DAN GARDER, SUPERFORECASTING: THE ART AND SCIENCE OF PREDICTION 4 (1st ed. 2015).

95 *Id.* at 69.

were wedded to one big idea and would defend it regardless of contrary reality. The more effective forecasters were those who were open to new information and willing to adjust their beliefs accordingly.[96] These forecasters he called "foxes."[97] The labels were borrowed from an essay by Isaiah Berlin, in which he offered that "[t]he fox knows many things but the hedgehog knows one big thing."[98] The tools to make better forecasters and wiser decisionmakers are rooted in humility. "The humility required for good judgment is not self-doubt . . . [i]t is a recognition that reality is profoundly complex, that seeing things clearly is a constant struggle."[99]

Grounded in intellectual humility and recognizing the need for decision support, decision makers can learn to have better calibrated confidence and more accurate forecasts. "Decision psychology shows that almost everyone tends to be biased either toward 'overconfidence' or 'underconfidence' about our estimates and the vast majority of those are overconfident."[100] Crucially, research has discovered that "assessing uncertainty is a general skill that can be taught with a measurable improvement."[101] With training and practice, people can become better calibrated forecasters. Decision makers can use "back casting" or "pre-mortem" by imagining a future where the decision is made and after some time it fails. The decision maker is then asked to imagine what happened. Why did it fail? This helps break the causal chains we develop when convincing ourselves of a decision, making us more open to alternative interpretations.

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96 *See id.* at 68–72.
97 *Id.* at 69.
98 *Id.*
99 *Id.* at 228.
100 DOUGLAS W. HUBBARD, HOW TO MEASURE ANYTHING: FINDING THE VALUE OF "INTANGIBLES" IN BUSINESS 94 (3d ed. 2014).
101 *Id.* at 95.

An important takeaway for willfully developing wisdom is to always strive to be a fox**.** The mindset that can make one a better forecaster with more calibrated confidence is the same mindset supported by more scientific thinking. It can be challenging for people trained to be zealous advocates to disengage that advocacy and biases that support a desired narrative. However, remaining open to new information and not staking ego on a position is very helpful to wise decision-making. "Thinking like a scientist involves more than just reacting with an open mind. It means being actively open-minded. It requires searching for reasons why you might be wrong—not for reasons why we must be right—and revising our view based on what we learn."[102] Even a deep specialist in a niche practice can benefit from constantly scanning the horizon and being open to new information and ideas. "Better information doesn't always result in better decision-making, but better decision-making almost always requires better information."[103]

C. DECISION SUPPORT SPECIFIC TO CLIMATE: IPCC DOCUMENTS

As discussed above, climate change is an immensely complex and vexing problem. "Aspects of decision making that distinguish climate change from most other contexts are the long time scales involved, the pervasive impacts and resulting risks and the 'deep' uncertainties attached to those risks."[104] One working group contributing to the Fifth Assessment Report of the IPCC sought to harness the tools of decision sciences and direct them squarely at this problem.[105] They began by noting that much previous policy advice

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[102] GRANT, *supra* note 43, at 25.
[103] PETROCELLI, *supra* note 71, at 11.
[104] ROGER N. JONES ET AL., *Foundations for Decision Making*, *in* CLIMATE CHANGE 2014: IMPACTS, ADAPTATION, AND VULNERABILITY, PART A: GLOBAL AND SECTORAL ASPECTS 200 (Rosina Bierbaum & Nicholas King eds., 2014).
[105] *See generally id.*

had been framed around an assumption that "better science will lead to better decisions."[106] Science has accurately predicted climate change for many decades, which is good evidence that the science alone is not enough. The IPCC panel agreed and noted that:

> Extensive evidence from the decision sciences shows that while good scientific and technical information is necessary, it is not sufficient, and decisions require context-appropriate decision-support processes and tools (*robust evidence, high agreement*). There now exists a sufficiently rich set of available methods, tools and processes to support effective climate impact, adaptation and vulnerability (CIAV) decisions in a wide range of contexts (*medium evidence, medium agreement*), although they may not always be appropriate combined or readily accessible to decision makers.[107]

The IPCC panel's description of what constitutes a good climate decision is substantially similar to the six elements of the Decision Quality model described above. Decisionmakers do not need to understand everything at the level of an expert, but they should actively seek to understand more. Making wise decisions still requires more than just accounting for the rational. Wise decisions must account for the people making and impacted by those decisions.

V. ACCOUNTING FOR ETHICS

To move from making high-quality, rational decisions to making wise decisions, ethical considerations must play a large role in the process. Climate ethics are different from most ethical questions people encounter in their daily lives or the legal ethics centered around professional responsibility. Climate issues range from intergenerational equity to the apportionment of voluntary and involuntary levels or risk; from cross-cultural relations to the human relationship with nature and technology.[108] Because of this complexity, to

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106 *Id.* at 198.
107 *Id.*
108 JONES ET AL., *supra* note 104, at 205.

fully equip practitioners, lawyers need more support than the typical single undergraduate class in philosophy and a semester of professional responsibility.

Entire courses and even graduate degrees could be built around a fulsome treatment of climate ethics. However, just a few foundational education pillars in ethics can help shape a climate phronesis. The first is adapting the tools of decision quality specifically to the ethics of decisions. Second is developing greater sophistication in evaluating consequences and articulating values. Critically, this means eschewing the current cultural devotion to empathy. Third, teaching the vital importance of dignity to humans and providing tools to maintain and promote dignity. Fourth, developing more sophisticated ethical methods of persuasion and motivation to breakthrough political polarization. Fifth, and finally, accepting compromise and incremental improvement—all or nothing approaches lead to long stalemates.

A. DECISION QUALITY AND ETHICS

The value of using interventions (e.g., the Decision Quality framework) to improve the wisdom of decisions is not an aspirational or theoretical notion. Studies have shown that interventions, even short-term interventions, "increase a person's wisdom in a given situation."[109] Those interventions do not typically provide new knowledge, rather they "activate knowledge and competencies that person would otherwise not utilize."[110] Interventions as simple as ego-decentering through instruction to intentionally imagine another's perspective, promote wisdom-related reasoning.[111]

Systematic interventions in the decision-making process can foster growth in

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109 Glück & Weststrate, *supra* note 17, at 365.
110 *Id.*
111 Igor Grossman, *Wisdom in Context*, 12 PERSP. ON PSYCH. SCI. 233, 244 (2017).

elements of wisdom. As just one example, well-structured decision-making processes will promote diversity among those analyzing information and participating in the decision. "The connection between diversity and improvements in the collective IQ of a group has been demonstrated by hundreds of experiments over the past few decades."[112] Genuine diversity in the composition of a decision-making body is key. Groups making decisions can be collectively wiser than their members if they are (1) heterogenous in knowledge and perspective and (2) value and intentionally leverage that heterogeneity.[113]

Applying the Decision Quality model will ultimately promote ethicality. Prof. Ali Abbas has offered a decision quality model tailored to and focused on the ethical dilemmas. The book blends ethical considerations with decision analysis to promote a culture of decisions where ethics play a central role in defining "good."[114] Of particular note to lawyers is Abbas' focus on impediments to ethical decisions including analyzing decisions where the conduct may not violate law but is nevertheless questionable ethically.[115]

B. DIGNITY

Researcher Donna Hicks defines dignity as "our inherent value and worth as human beings; everyone is born with it," which includes "the desire to be seen, heard, listened to, and treated fairly; to be recognized, understood and to feel safe in the world."[116] When we consider the scope and scale of potential impacts in some of the worse climate change scenarios, the import of accounting for human dignity in making decisions about climate

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112 JOHNSON, *supra* note 49, at 53.
113 Glück & Weststrate, *supra* note 17, at 365.
114 *See generally* ALI ABBAS, ETHICAL DECISION QUALITY: BUILDING AN ETHICAL DECISION CULTURE (2023).
115 *Id.*
116 Donna Hicks, *What is the Real Meaning of Dignity?*, PSYCHOLOGY TODAY (Apr. 10, 2013), https://www.psychologytoday.com/us/blog/dignity/201304/what-is-the-real-meaning-dignity-0.

becomes manifest. Disruptions caused by climate change are likely to cause substantial dislocation of people. Additionally, many modern states are susceptible to climate stress and disruption. "If this disruption is not managed well, the outcomes for social order and population health will be severe."[117] One commentator has asserted that "when climate changes people move, and when states can't feed their people, they fall."[118] Climate change already has ramifications for mental health. According to the American Psychiatric Association, "[c]limate change poses a significant and growing threat to public health in general and to mental health in particular."[119] Disruption resulting in economic shifts and job losses or relocations and loss of social cohesion will threaten both individual and communal dignity. Addressing dignity at both the individual and social level will be vital to making wise decisions about climate change.

In extreme cases, violations of dignity can lead to vengeance and violence. To make wise decisions in the context of climate issues and the energy transition, decision makers absolutely must account for and address that reality. Dignity is a component of, and at least partly a justification for, human rights. Intentionally addressing dignity in decision making will promote generativity, broader commitment to action, and wiser outcomes. "The act of honoring dignity is powerful in and of itself . . . [w]hen we extend dignity to others, we open ourselves to the possibility of becoming more caring, more loving, more compassionate." [120] For wiser decision making in this large, long-term, and high

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117 Alistair Woodward, *Climate Change: Disruption, Risk, and Opportunity*, 1 GLOBAL TRANSITIONS 44, 46 (2019).

118 *Id.*

119 ROBERT J. Ursano et al., *Am. Psychiatric Ass'n, Position Statement on Mental Health and Climate Change* (2023), https://www.psychiatry.org/getattachment/0ce71f37-61a6-44d0-8fcd-c752b7e935fd/Position-Mental-Health-Climate-Change.pdf.

120 DONNA HICKS, DIGNITY: ITS ESSENTIAL ROLE IN RESOLVING CONFLICT 198 (2021).

consequence context it is worth noting that empathy is not on that particular list.

C. NOT EMPATHY

The idea that empathy is anything but a virtue might be shocking. However, to effectively face the major challenges of our time, decision makers must steer away from a focus on empathy and toward what Paul Bloom calls "rational compassion."[121] Most definitions of empathy include some aspect of not merely understanding but also sharing the feelings of others. Empathy is valuable in interpersonal relationships and for decision-making at a small scale. However, empathy tends to narrow our focus and can emphasize that "we are constituted to favor our friends and family over strangers, to care more about members of our own group than people from different, perhaps opposing, groups."[122] This, in turn, extenuates our biases and makes decision making less rational and more innumerate. By contrast, engaging rational compassion seeks to engage a sympathetic, but more dispassionate, objective care for others when making decisions.

Rational compassion is essential to wisely making the tough choices the world must make to effectively confront a climate change impacted future. When considering responses to climate change, empathy will steer toward little or no action at all. Because virtually all policy choices have consequences that disadvantage someone, employing empathy as a basis for decision making risks ossifying progress. Even when the disadvantages are transient and temporary, actions (such as a carbon tax on fossil fuels) tend to disproportionately disadvantage the poor. Other adaptations such as changes in zoning to prohibit construction in flood zones can displace people and increase housing

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[121] *See* PAUL BLOOM, AGAINST EMPATHY: THE CASE FOR RATIONAL COMPASSION (2016).
[122] *Id.* at 94.

costs. In the words of Paul Bloom, "[a] reasoned, even counterempathetic analysis of moral obligations and likely consequences is a better guide to planning for the future than the gut wrench of empathy."[123]

D. CHANGING MINDS AND GALVANIZING ACTION

> Climate change arguably presents the most challenging collective action problem the world has ever faced. Rising global temperatures . . . will fundamentally reshape societies, threatening economies, health care systems and geopolitical relations. . . . In this context, it is crucial to understand how best to promote high-impact individual and collective actions to mitigate the effects that will occur as a result of climate change.[124]

Minimizing resistance to difficult but necessary adaptations and galvanizing action around them is crucial because "[p]sychologists find that people will ignore or even deny the existence of a problem if they are not fond of the solution."[125] One study on message framing around climate change found that messages directed at the need for individual action were viewed more negatively and even correlated to an increase in skepticism about climate science whereas "[m]essages about policies that would affect others, such as taxes on industry and business or on carbon emitters, are more palatable and do not result in such a negative response."[126] Failing to effectively manage messaging compounds a difficult problem. "When we're preaching, prosecuting or politicking, the complexity of reality can seem like an inconvenient truth."[127] "This is a common problem in persuasion: what does not sway us can make our beliefs stronger. Much like a vaccine inoculates our physical immune system, the act of resistance fortifies our psychological immune system."[128] For

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123 *Id.* at 127.
124 Risa Palm et al., "Don't Tell Me What to Do": *Resistance to Climate Change Messages Suggesting Behavior Changes*, 12 WEATHER, CLIMATE, & SOCIETY 827, 827 (Oct. 14, 2020).
125 GRANT, *supra* note 43, at 173.
126 Palm et al., *supra* note 124, at 833.
127 GRANT, *supra* note 43, at 183.
128 *Id.* at 145.

lawyers trained in advocacy this is a signal that more elaborate arguments with more points of support are likely not the best tactic for persuasion outside of the courts.

Fortunately, the social sciences are discovering how minds change. Research in persuasion has found effective techniques for issue persuasion, but of course they must be utilized ethically.[129] Deep Canvassing is a detailed technique for issue campaigning that shows promising results in bridging political divisions and finding common ground on topics with deep emotional roots such as race, immigration, and environmental issues.[130] David McRaney's book, *How Minds Change: The Surprising Science of Belief, Opinion and Persuasion*, illuminates current research into what works and what does not.[131] Much of what works centers on techniques to manage biases and heuristics that can bedevil our decision making. In describing motivational interviewing, a technique similar to Deep Canvassing, Adam Grant noted that "we can rarely motivate someone else to change. We're better off helping them find their own motivation to change."[132] Empowering people to examine their own believes is rooted in respect for the fundamental dignity of people, further emphasizing the importance of accounting for it when making climate-related decisions.

E. COMPROMISE

Compromise seems to be a dirty word these days. That is terribly unfortunate in the context of climate. According to the Brookings Institution, in 2022:

> Most wind energy projects in the pipeline are stuck in the permitting phase, with just 21% of planned projects currently under construction. Major

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129 *See generally* ROBERT CIALDINI, INFLUENCE: THE PSYCHOLOGY OF PERSUASION 429–33 (2021).
130 DEEP CANVASS INST., https://deepcanvass.org/ (last visited Oct. 14, 2023).
131 *See generally* DAVID MCRANEY, HOW MINDS CHANGE: THE SURPRISING SCIENCE OF BELIEF, OPINION, AND PERSUASION (2022).
132 GRANT, *supra* note 43, at 146.

> transmission projects have run into hurdles or been shelved entirely in recent years. In sum, there is a clear and evident need to proceed with ambitious reform of the nation's energy infrastructure permit system.[133]

Progress is lacking on issues such as the use of federal lands for transmission. A lack of consensus and inability to compromise also leaves the U.S. with significant open issues—such as a location for long-term repositories for spent nuclear fuel. To resolve these hard questions, and advance low carbon energy development, some interests will necessarily be compromised, some disadvantaged, and others variously compensated.

Compromise for many connotes an outcome that is sub-optimal. For a decision scientist, it can equate to the notion of "satisficing"—that is, taking a minimally acceptable outcome without seeking to maximize value. That is not what I am suggesting. Political compromise wherein competing needs, wants and acceptable outcomes are considered and balanced is what is essential. Compromise has utility and utility allows things to progress. Decades of gridlock is not wise and will not facilitate a wise response to the climate crisis. As we try to move to net zero carbon emissions, incremental policy improvement is very likely wiser than a long delay in anticipation of one single dramatic change that may never come.

Promotion of wisdom, generativity, and ethical persuasion may help destigmatize the notion of political compromise. During a Senate debate in 1850, Senator Henry Clay is reported to have said that "[a]ll legislation, all government, all society is formed upon the principle of mutual concession, politeness, comity, courtesy; upon these, everything is

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[133] Rayan Sud & Sanjay Patnaik, *How Does Permitting for Clean Energy Infrastructure Work?*, BROOKINGS (Sept. 28, 2022), https://www.brookings.edu/articles/how-does-permitting-for-clean-energy-infrastructure-work/.

based."[134] It surely recognizes the need to account for multiple perspectives in complex situations. Moreover, a willingness to compromise seems to inherently recognize the limits of one's own knowledge and ability to predict the future. It also takes a long view, promotes generativity, and respects the inherent dignity of those in the process.

VI. CONCLUSION

My prescription here is for a willful wisdom, a phronesis directed at climate issues. I do that because of the exigency of the problem. However, the skills and mindsets prescribed can be applied far beyond climate change solutions. The basis for wisdom grounded in intellectual humility and intentional ethics will also do well in helping make decisions about artificial intelligence and other looming issues facing the world. Given the scope and scale of the climate crisis, extremely challenging decisions must be made. Even a very successful adaptation will mean millions of people are adversely affected. Minimizing the severity and adapting to the impact will require many changes, some of which will be positive for some and a hardship for others. For that, we need more than just good decisions.

> Decision making lies at the heart of wisdom, but it's not the whole story. Making those decisions, in turn, draws on a subtle weave of intellectual, emotional, and social gifts—gathering information, discerning the reality behind artifice (especially when it comes to human nature), evaluating and editing that accumulated knowledge, listening to one's heart and one's head about what is morally right and socially just, thinking not only of oneself but others, thinking not only in the here and now but in the future.[135]

Provided they are made with wisdom, decisions about climate issues and the energy transition will create better outcomes than the alternative of decisions that are unfocused,

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[134] Deborah Tannen, *Why is 'Compromise' a Dirty Word?*, POLITICO (June 15, 2011, 9:29 PM), https://www.politico.com/story/2011/06/why-is-compromise-a-dirty-word-057044.

[135] HALL, *supra* note 23, at 7–8.

poorly decided, unprincipled or morally ambiguous. Let us not forget the enormous opportunity in this challenge. In navigating the energy transition, we have before us the potential to create a cleaner, safer, and better world. So, we need to be willful in our wisdom.

Willful wisdom is in intellectual humility. It is in recognizing that our brains are wonky and error prone. It is in slowing down and engaging in DQ and utilizing DA. It is in being intentional about ethics. It is in taking the long view. It is in heeding the words often attributed to Maya Angelou, "Do the best you can until you know better. Then when you know better, do better."[136] Do not be satisfied to wait and see if you get wise. Willfully seek practical wisdom, grounded in scientific thinking, then apply it broadly and share it widely.

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[136] *You Did What You Know How to Do, and When You Knew Better, You Did Better*, QUOTE INVESTIGATOR (Nov. 30, 2022), https://quoteinvestigator.com/2022/11/30/did-better/.

Death Watch: The Legislative End of Syndicated Conservation Easements

By Beckett Cantley & Geoffrey Dietrich

I. Introduction 36

II. The SCE Transaction 41

A. Conservation Easement Requirements.....41

B. The SCE Transaction 44

III. The IRS Attack on SCEs.....45

A. Notice 2017–10: Listed Transaction 45

B. Exclusivity for Conservation Purposes Cases 46

C. Perpetuity Cases 51

D. Valuation Cases.....56

E. The IRS Settlement Initiative 57

IV. The Legislative History Regarding Easements in the Consolidated Appropriations Act of 2023 (P.L. 117–328). 59

V. Analysis.....62

VI. Conclusion 64

I. INTRODUCTION

Congress has recognized the tax deductibility of a partial interest in real property

since 1969.[1] Despite this tax deduction being five decades old, taxpayers receive conflicting messages from the government on the extent and limitations of this deduction. In 1980, Congress enacted Section 170(h), which allows landowners to claim a tax deduction for the donation of a conservation easement (CE).[2] When Congress pushed to enact this section, it intended for CEs to incentivize the preservation of the nation's natural resources and cultural heritage "without presenting significant potential for abuse."[3] Section 170(h) has since been amended several times. In 2006, Congress made several changes. Congress (1) added a definition for "qualified appraiser,"; (2) lowered the threshold at which the Internal Revenue Service (IRS) could assert penalties based on erroneous appraisals; and (3) made the tax deduction even more appealing by allowing taxpayers to deduct up to 50% of their adjusted gross incomes (instead of 30%); and (4) allowed them to carryforward unused deductions for up to fifteen years (instead of five years).[4] Congress amended these benefits several times before finalizing them in 2015.[5]

Congress created these appealing incentives for taxpayers to engage in CE donations despite warnings from the IRS and Treasury Department that rampant abuse of the deductions could occur.[6] In 1980, the Treasury Department warned Congress against passing Section 170(h) too hastily.[7] In 2006, the tax deduction expanded and the IRS noted two issues with CE transactions.[8] The first was whether CEs were exclusively for the

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1 Tax Reform Act of 1969, Pub. L. No. 91-172, § 201, 83 Stat. 487, 549–65.
2 Tax Treatment Extension Act, Pub. L. No. 96-541, § 6(a), 94 Stat. 3204, 3206–8 (1980); S. REP. No. 96-1007, at 2–3 (1980).
3 S. REP. No. 96-1007, at 9 (1980).
4 *See* Pension Protection Act, Pub. L. No. 109-280, § 1206, 120 Stat. 780, 1083–86 (2006).
5 Protecting Americans from Tax Hikes Act, Pub. L. No. 114-113, § 111, 129 Stat. 3040, 3046 (2015).
6 *See* S. REP. NO. 96-1007, at 9.
7 *See id.* at 15.
8 S. REP. NO. 116-44, at 5 (2020).

purpose of conserving real property.[9] The second issue was whether the valuations of the easements were legitimate or fanciful. If fanciful, then taxpayers were abusing the deduction by "inflat[ing] appraisals of" land.[10] Congress continued to champion CEs, despite its recognition of the valuation question along with other challenges.[11]

Despite congressional support for CEs, the IRS and the Department of Justice (DOJ) continue to attack syndicated conservation easements (SCEs).[12] In 2016, the IRS issued Notice 2017-10 and labelled SCEs as "listed transactions."[13] This triggered the need for numerous parties to file Form 8886, Reportable Transaction Disclosure Statement, and Form 8918, Material Advisor Disclosure Statement. The IRS threatened penalties and fines for any persons who failed to file these forms.[14] The IRS would use the information disclosed through these forms in future attempts to crack down on abusive SCE transactions. The IRS had real concerns for SCEs: (1) whether the intent of the easements was truly to conserve real property and (2) whether the valuations involved were legitimate or fanciful.[15]

In June 2020, the IRS issued a news release detailing a potential resolution (Settlement Initiative), where eligible partnerships would receive settlement offers.[16] Though the Settlement Initiative seems like a proverbial olive branch, it still has

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9 *Id.*
10 *Id.*
11 S. REP. NO. 116-44, at 1 (2020); *see also* Conservation Easement Incentive Act of 2015, S. 330, 114th Cong. (2015); STAFF OF J. COMM. ON TAXATION, 114TH CONG., GEN. EXPLANATION OF TAX LEGISLATION ENACTED IN 2015 (Comm. Print 2016).
12 I.R.S. Notice 2017-10, 2017-4 I.R.B. 544.
13 *Id.*
14 *Id.*
15 *See* S. REP. NO. 116-44, at 1 (2020).
16 *See* I.R.S. News Release IR-2020-130 (June 25, 2020); *see also* Hale E. Sheppard, *Questions Remain About the Conservation Easement Settlement Initiative*, 168 TAX NOTES FED. 2219, 2219 (2020) (referencing IR-2020-130).

drawbacks. Even if a promoter or partnership chooses to participate in the Settlement Initiative, they may still be subject to penalties and fines by the IRS.[17] Additionally, participants in the easements are generally classified into two categories.[18] One of the categories participated in the Settlement Initiative and could still potentially be punished.[19] The other category did not participate in the Settlement Initiative and could be largely left off the hook if successful in U.S. Tax Court litigation.[20] This separation of partners could generate distrust, an advantage the IRS could use during litigation.[21]

In August 2020, the Senate Finance Committee conducted an inquiry and issued a report suggesting the reviewed SCEs constituted "abusive tax shelters."[22] While both promoters and partners recognized this abuse, the report offered no solutions.[23] The Senate Finance Committee underscored its desire to keep the Section 170(h) deduction, saying that the IRS and Treasury Department should further "preserve the integrity of the conservation-easement tax deduction."[24]

On June 22, 2022, the Senate Finance Committee again stressed its desire to keep the Section 170(h) deduction in its markup of the Enhancing American Retirement Now Act (EARN Act). The approved amendment used "a modified version of the Charitable Conservation Easement Program Integrity Act of 2021 . . . to offset the costs of a tax break

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17 I.R.S. News Release IR-2020-130 at 2 (June 25, 2020) ("The IRS will continue to disallow the claimed tax benefits, asserting civil penalties to the fullest extent, considering criminal sanctions in appropriate cases, and continuing to pursue litigation of the cases that are not otherwise resolved administratively.").
18 Sheppard, *supra* note 16, at 2223–24.
19 *Id.* at 2227.
20 *Id.* at 2228.
21 *Id.*
22 S. REP. NO. 116-44, at 105 (2020).
23 *Id.*
24 *Id.* at 4.

for disabled first responders."[25] To ensure the tax break would become effective sooner, the committee offset its cost by adopting legislation to curb abusive SCE transactions.[26] This attempt to curb abusive SCE is based on a prior 2021 proposal that would deny the Section 170(h) deduction if the passthrough entity donating the easement's charitable contribution exceeded "2.5 times the taxpayer's relevant basis."[27] This deduction disallowance was initially to apply retroactively to December 23, 2016—the date the IRS issued Notice 2017-10 designating certain SCEs as listed transactions.[28] However, the subsequent proposal by the committee would advance the SCE disallowance but only to SCEs taking the deduction on or after the date of the bill's enactment to prevent it from being seen as punitive or unfair.[29] It also included a curing provision for defective deeds permitting CE donors (but not SCE donors) to correct property line adjustments and extinguishment clauses.[30]

On December 29, 2022, these proposed ideas were ultimately enacted as the SECURE 2.0 Act (Secure Act), which was rolled up into the Consolidated Appropriations Act of 2023 (Omnibus Act).[31] The Secure Act's easement provisions and changes to Section 170 were based on the Conservation Easement Integrity Act (Integrity Act), a bipartisan bill that attacks SCEs, and which lawmakers struggled to pass since 2017.[32] The

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25 Kristen A. Parillo, *Senators Adopt Plan to Disallow Tax Break on Syndicated Easements*, TAX NOTES (June 23, 2022), https://www.taxnotes.com/tax-notes-today-federal/charitable-giving/senators-adopt-plan-disallow-tax-break-syndicated-easements/2022/06/23/7dlgp?highlight=Senators+adopt+plan+to+disallow+tax+break+on+syndicated+easements.

26 *Id.*

27 *Id.*

28 *Id.*

29 Enhancing American Retirement Now (EARN) Act, S.4808, 117th Cong. § 1104 (2022).

30 *Id.*; *see also* Parillo, *supra* note 25.

31 *See* Consolidated Appropriations Act of 2023, Pub. L. No. 117-328, § 605, 136 Stat. 4459.

32 *See* H.R. REP NO. 4164 (2021); *see also* S. REP. NO. S.2256 (2021).

relevant provisions of the Secure Act regarding CEs are: (1) the denial of a Section 170 charitable deduction for contributions that exceed 2.5 times the taxpayer's relevant basis in the passthrough entity that donated the easement;[33] (2) a new exception for historic CEs;[34] and (3) a curing provision with safe harbor language to be published at a later date by the Treasury.[35] This safe harbor language has since been posted and is known as Notice 2023-30.[36] The Secure Act changes are effective for transactions entered into after the date of enactment.[37]

II. THE SCE TRANSACTION

A. CONSERVATION EASEMENT REQUIREMENTS

When an individual donates a CE, they are voluntarily restricting certain future uses of a property in perpetuity for the benefit of society.[38] Taxpayers cannot, however, donate an easement on any property and claim the deduction. A donation must be for a "conservation purpose," which means it preserves (1) land "for outdoor recreation by, or the education of, the general public," (2) "a relatively natural habitat of fish, wildlife, or plants, or a similar ecosystem," (3) "open space (including farmland and forest land)" for the scenic enjoyment of the general public and will yield a significant public benefit, (4) "open space (including farmland and forest land)" pursuant to federal, state, or local

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33 Consolidated Appropriations Act § 605(A)(1)(7)(A) ("A contribution by a partnership (whether directly or as a distributive share of a contribution of another partnership) shall not be treated as a qualified conservation contribution for purposes of this section if the amount of such contribution exceeds 2.5 times the sum of each partner's relevant basis in such partnership.").

34 *Id.* § 605(a)(1)(7)(E) ("Subparagraph (A) shall not apply to any qualified conservation contribution the conservation purpose of which is the preservation of any building which is a certified historic structure (as defined in paragraph (4)(C)).").

35 *Id.* § 605(d)(1).

36 I.R.S. Notice 2023-30 (Apr. 10, 2023).

37 *See* Consolidated Appropriations Act § 605(c)(1).

38 26 C.F.R. § 1.170A-14(a).

governmental conservation policy and will yield a significant public benefit, or (5) a "historically important land area or a certified historic structure."[39]

Taxpayers must memorialize the charitable donation by filing a public Deed of Conservation Easement or similar document.[40] In preparing the deed, the taxpayer must coordinate with the land trust to identify certain activities that may continue upon the property after donation and do not interfere with the deed, prejudice the conservation purposes, nor damage the tax deduction.[41] These activities are called "reserved rights."[42] The IRS openly recognizes that reserved rights are ubiquitous.[43] Further, the IRS will disallow the CE tax deduction without an estimation of the condition of the property before the donation.[44] This estimation is called the Baseline Report, which may include: (1) "survey maps" identifying property lines, (2) maps indicating "man-made improvements," (3) aerial photography of the property, and (4) "onsite photographs" taken from several locations on the property.[45]

The CE's value is the property's fair market value (FMV) at the time of the donation.[46] This is typically the agreed value of the property between a willing buyer and seller.[47] Both parties possess reasonable knowledge of the relevant facts, but neither party

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39 26 U.S.C. § 170(h)(4)(A); *see also* 26 C.F.R. § 1.170A-14(d)(1); S. REP. NO. 96-1007, at 10 (1980).

40 *See* 26 C.F.R. § 1.170A-14(g)(1).

41 *See* INTERNAL REVENUE SERV., PUBL'N 5464, CONSERVATION EASEMENT AUDIT TECHNIQUE GUIDE 94 (2021) ("Taxpayers are permitted to reserve some development rights on a portion of the property . . . provided that conservation purposes are protected."); *see also* 26 C.F.R. § 1.170A-14(e)(3).

42 *See* CONSERVATION EASEMENT AUDIT TECHNIQUE GUIDE, *supra* note 41, at 94.

43 *See id.* at 38 (noting that "all conservation easements reserve some rights for the owner of the encumbered property. Depending on the nature and extent of these reserved rights, the claimed conservation purpose may be impaired to such a degree that the contribution may not be allowable."); *see also* Treas. Reg. §§ 1.170A-14(e)(2), (e)(3).

44 26 C.F.R. § 1.170A-14(g)(5)

45 *Id.* § 1.170A-14(g)(5)(i).

46 *Id.* § 1.170A-1(c)(1).

47 *Fair Market Value*, BLACK'S LAW DICTIONARY (11th ed. 2019).

is obligated to participate in the transaction.[48] The best evidence for an easement FMV is to compare the FMV of other easements in size, location, etc. The IRS recognizes it can be difficult, if not almost impossible, to find comparable sales of easement-encumbered properties.[49] Consequently, appraisers must often use the before and after method for determining the FMV, which means an appraiser must determine the highest and best use (HBU) of the property and the corresponding FMV before and after the easement.[50]

A property's HBU is the most profitable way a parcel of property could be adapted and needed in the near future.[51] An HBU is a physically possible, legally permissible, financially feasible, and maximally productive use.[52] Importantly, an easement valuation does not require the property be put to its HBU—only that it be any realistic potential use of the property.[53] Common HBUs include construction of a residential community, the creation of a mixed-use development, or natural resource and mining rights.

To determine the FMV, first, the appraiser calculates the FMV as if the property were put to its HBU, which generates the "before" value.[54] Second, the appraiser identifies the FMV, considering the restrictions on the property imposed by the CE, and projects the "after" value.[55] The difference between the "before" value and the "after" value of the property, with certain adjustments, produces the value of the donation and the resultant tax deduction.[56]

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48 *Id.*
49 CONSERVATION EASEMENT AUDIT TECHNIQUE GUIDE, *supra* note 41, at 14.
50 *Id.*
51 Olson v. United States, 292 U.S. 246, 255 (1934).
52 *See* CONSERVATION EASEMENT AUDIT TECHNIQUE GUIDE, *supra* note 41, at 61.
53 Symington v. Comm'r of Internal Rev. Serv., 87 T.C. 892, 896 (1986).
54 CONSERVATION EASEMENT AUDIT TECHNIQUE GUIDE, *supra* note 41, at 61.
55 *Id.*
56 *Id.*

However, properly claiming the tax deduction from a conservation easement donation is surprisingly complicated. It involves several significant steps. Of those steps, the most significant are: (1) the taxpayer must obtain a "qualified appraisal" from a "qualified appraiser," (2) demonstrate that the land trust to whom property was donated is a "qualified organization," (3) obtain a Baseline Report adequately describing the property conditions at the time of donation and why it is worthy of perpetual protection, (4) all parties must complete and execute Form 8283, (5) if the taxpayer is a partnership, file a timely form 1065 with an enclosed Form 8283 and "qualified appraisal," (6) receive a "contemporaneous written acknowledgement" from the land trust, both for the easement itself and for any endowment/stewardship fee donated to ensure the property is properly and perpetually protected, and (7) sending all partners their respective K-1s and a copy of Form 8283.[57]

B. THE SCE TRANSACTION

Under Section 170(h), taxpayers may take a tax deduction for donating a CE.[58] The purpose of the tax deduction is to encourage the preservation of land.[59] The amount of the deduction is generally equal to the difference between the value of the land at its HBU and the value of the land after the CE is executed.[60] To use this deduction, many taxpayers created SCE transactions. Typically, SCE transactions involve investors who form and

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57 *See generally* CONSERVATION EASEMENT AUDIT TECHNIQUE GUIDE, *supra* note 41; INTERNAL REVENUE SERV., PUBL'N 1771, CHARITABLE CONTRIBUTIONS—SUBSTANTIATION AND DISCLOSURE REQUIREMENTS (2016); INTERNAL REVENUE SERV., PUBL'N 526, CHARITABLE CONTRIBUTIONS (2023) (providing guidance for preparing 2022 returns); 26 U.S.C. §§ 170(f)(8), 170(f)(11); 26 C.F.R. § 1.170A-13; I.R.S. Notice 2006-96, 2006-46 I.R.B. 902; T.D. 9836, 83 Fed. Reg. 45826-01 (Sept. 11, 2018).

58 *See generally* 26 U.S.C. § 170.

59 *Id.*

60 26 C.F.R. § 1.170A-14(h)(3)(ii).

contribute funds to a partnership (Investor PS).[61] First, the Investor PS buys a partnership (Asset PS), which owns a tract of land that has been held by the Asset PS for more than one year.[62] Second, the Investor PS obtains an appraisal of the land's HBU, which is usually considerably higher than the amount paid for the land.[63] Third, the Asset PS donates the land with a conservation easement.[64] Finally, the Investor PS partners take pro rata deductions, which usually far exceed their initial partnership investment, based on the new valuation of the land after their charitable contribution under Section 170.[65]

III. THE IRS ATTACK ON SCEs

A. NOTICE 2017–10: LISTED TRANSACTION

In December 2016, the IRS issued Notice 2017-10, designating SCE transactions and other substantially similar transactions as "listed transactions."[66] This required transaction participants to file forms providing substantial legal information to the IRS.[67] The IRS identified SCE transactions because they give investors the opportunity to obtain charitable contribution deductions in amounts that significantly exceed the amount invested.[68] The charitable deduction promised to investors was typically more than 2.5 times the initial investment in the Investor PS.[69] The IRS stated it intended to challenge the inflated tax benefits from these transactions based on the overvaluations of the CE.[70]

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61 Jimmy Godin, *A Sand County Tax Shelter: Syndicated Conservation Easements and Their Toll on the American Taxpayer*, 2022 UTAH L. REV. 213, 224 (2022).
62 *Id.*
63 *Id.*
64 *Id.*
65 I.R.S. News Release IR-2020-130 (Jun. 25, 2020) (hereinafter "IR-2020-130").
66 I.R.S. Notice 2017-10, 2017-4 IRB 544.
67 *Id.*
68 *Id.*
69 *Id.*
70 *Id.*

B. EXCLUSIVITY FOR CONSERVATION PURPOSES CASES

The majority of these CE cases center on whether the contribution is "exclusively for conservation purposes."[71] The Internal Revenue Code permits tax deductions for conservation easements granted to charitable organizations so long as: (1) the grant is in perpetuity, and (2) the grant is exclusively for conservation purposes.[72] Section 170(h) defines "conservation purpose" as§:

> (i) the preservation of land areas for outdoor recreation by, or the education of, the general public,
> (ii) the protection of a relatively natural habitat of fish, wildlife, or plants, or similar ecosystem,
> (iii) the preservation of open space (including farmland and forest land) where such preservation is
>
> (I) for the scenic enjoyment of the general public, or
>
> (II) pursuant to a clearly delineated Federal, State, or local governmental conservation policy, and will yield a significant public benefit, or,
>
> (iv) the preservation of an historically important land area or a certified historic structure.[73]

The IRS has challenged conservation easements under Section 170(h)(4)(A)(ii), which covers easements made to protect "a relatively natural habitat of fish, wildlife, or plants, or a similar ecosystem."[74] The IRS has interpreted this provision as requiring that the CE must also "protect a *significant* relatively natural habitat."[75] Thus, the Code mandates that the protection at issue must be "significant" to qualify for the deduction.[76] Significance is subjective and is decided on a case-by-case basis.[77]

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71 *See* 26 U.S.C. § 170(h)(5).
72 *Id.* § 170(h)(4)(A).
73 *Id.* § 170(h)(4)(A).
74 *See id.* § 170(h)(4)(A)(ii).
75 26 C.F.R. § 1.170A–14(d)(3)(i) (emphasis added).
76 *Id.*
77 *See* Champions Retreat Golf Founders, LLC v. Comm'r of Internal Rev. Serv., 959 F.3d 1033, 1036–37 (11th Cir. 2020).

One of the most recent cases challenging the significance of the protection of environmental and wildlife interests is *Champions Retreat Golf Founders*, *LLC v. Commissioner.*[78] In that case, the taxpayers bought a 463-acre tract of land in 2002, allocating two-thirds of the parcel for use as a golf course.[79] The remaining third was used for homesites or remained undeveloped.[80] In 2010, the taxpayers executed a CE on a 348-acre portion of the land, including the undeveloped land and the golf course.[81] The easement land is "home to abundant species of birds, some rare, to the regionally declining southern fox squirrel, and to a rare plant species, the denseflower knotweed."[82] The issue in the case became whether the taxpayers contributed the CE for "the protection of a relatively natural habitat of fish, wildlife, or plants, or similar ecosystem," or for "preservation of open space . . . for the scenic enjoyment of the general public that will yield a significant public benefit."[83] The Tax Court ruled against the taxpayers.[84] The Eleventh Circuit reversed, finding the Tax Court's ruling to be based on erroneous findings of facts and wrong as a matter of law.[85]

The Eleventh Circuit broadly construed the regulations, holding that at least part of the easement was exclusively for conservation purposes and that it protected a natural habitat of fish or other such ecosystem.[86] The IRS, on the other hand, argued that the

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78 *Id.*
79 *Id.* at 1034.
80 *Id.*
81 *Id.* at 1035.
82 *Id.* at 1034.
83 *Id.* at 1036 (quoting I.R.C. § 170(h)(4)(A)).
84 *Id.* at 1035.
85 *Id.* at 1039, 1041 ("The bottom line is this: the record establishes that Champions is entitled to a deduction in the proper amount. . . . The Tax Court's decision is vacated, and the case is remanded.").
86 *Id.* at 1040.

presence of a golf course prohibited the land from being considered "natural."[87] The Court rejected this argument, noting that what matters for the regulation is not that the land is "natural" but that the habitat is natural.[88] Because the easement provided habitat to some endangered species, the taxpayers were entitled to the deduction.[89] Additionally, the Court found that but for the presence of the golf course on the land, the easement could clearly be for the preservation of public enjoyment.[90] However, while the taxpayers prevailed, the ruling was remanded to the Tax Court for valuation analysis.[91]

In general, the Tax Court is much more hesitant to find that CEs are made exclusively for conservation purposes. As seen in *Champions*, the Tax Court relies on the term "significant" in the relevant regulation as justification.[92] The Tax Court seems to prefer weighing the particular facts and circumstances in each instance, rather than following strict guidelines for its rulings. Consequently, the Tax Court fails to create any identifiable or objective framework for determining what is significant under the regulation. Accordingly, the Tax Court's standard of "exclusively for conservation purposes" is both high and unpredictable. While circuit courts, like the Eleventh Circuit in *Champions*, are generally more sympathetic to taxpayers and interpret the applicable regulations quite broadly, the Tax Court insists on construing the regulations narrowly.[93] Perhaps most importantly, even if taxpayers win the exclusivity issue, valuation remains a

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87 *Id.* at 1038.
88 *Id.* at 1039.
89 *Id.* at 1039.
90 *Id.* at 1041.
91 *Id.*
92 *See id.* at 1036.
93 *See, e.g.*, Pine Mountain Pres., LLLP v. Comm'r of Internal Rev. Serv., 151 T.C. 247 (2018), (requiring the Tax Court to evaluate the fair market value of the conservation restriction at the time of the contribution using the standards set forth in the governing regulations), *aff'd in part, vacated in part, rev'd in part*, 978 F.3d 1200 (11th Cir. 2020).

significant hurdle.

For a gift to be considered exclusively for conservation purposes, the taxpayer can receive no other consideration and can place no conditions on the gift.[94] While this argument is not explicitly stated in the text of IRC Section 170(h), it is implicit in the analysis.[95] IRC Section 170(c) defines a charitable contribution as a contribution or gift to or for the use of various specified entities or other types of entities for certain approved purposes.[96] This means that a charitable contribution cannot include a quid pro quo arrangement to be eligible for a deduction.[97]

CEs have been defeated when the donor conditioned the gift or received something in return.[98] For example, in *Pollard v. Commissioner*, the Tax Court denied a deduction related to a CE because the taxpayer gifted the CE to the county in exchange for a subdivision exemption.[99] The court held that the quid pro quo arrangement in place disqualified the charitable contribution deduction from the CE.[100]

Additionally, in *Graev v. Commissioner*, the taxpayer made a side deal which placed a condition on the CE.[101] The side deal provided that if the IRS should disallow the taxpayer's charitable deduction, the taxpayer would recoup his investment and both parties would work to extinguish the CE. The Treasury regulation prohibits deductions for a charitable contribution that is subject to a condition unless the donor's interest in the

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94 *See* 26 U.S.C. § 170(h).
95 *See id.*
96 *See id.* § 170(c).
97 Pollard v. Comm'r of Internal Rev. Serv., 105 T.C.M. (CCH) 1249, *18 (T.C. 2013).
98 *See, e.g.*, Wendall Falls Dev., LLC v. Comm'r of Internal Rev. Serv., 115 T.C.M. (CCH) 1197, *4 (T.C. 2018).
99 *See Pollard*, 105 T.C.M. (CCH) 1249 at *31.
100 *Id.*
101 *See* Graev v. Comm'r of Internal Rev. Serv., 140 T.C. 377 (2013).

contribution being defeated is "negligible" on the contribution date.[102] The court held that the possibility of the donee's interest in the land being defeated was not remote enough to be negligible.[103] Thus, the taxpayer's deduction was disallowed.[104]

Therefore, those seeking to create a conservation easement should understand that a contribution is not considered to be a "qualified conservation contribution," unless it was actually a charitable contribution.[105] Only under rare circumstances can a charitable contribution be subject to a condition and remain charitable.[106] If a contribution is not charitable, it cannot be a "qualified conservation contribution" as it would not be "exclusively for conservation purposes."[107] Therefore, if challenged, taxpayers with CEs subject to conditions or resulting from a quid pro quo arrangement are likely to lose their entire deduction.

Moreover, federal courts have struck down the IRS's Notice 2017-10 due to the Administrative Procedure Act's (APA) procedural requirements.[108] Additionally, with the passage of the Integrity Act (the Secure Act's easement provisions), many lawmakers, real estate groups, and those who have opposed the reporting rules for SCEs are waiting for the IRS to issue new guidance on these donated easements.[109] The IRS's proposed rule replacing Notice 2017-10 would impose additional reporting requirements subject to

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102 *Id.* at 390; 26 C.F.R. § 1.170A-1(e).
103 *Graev*, 140 T.C. at 394.
104 *Id.* at 409.
105 *See* 26 U.S.C. § 170.
106 *See* 15 AM. JUR. 2d *Charities* § 4 (2023).
107 *See* 26 U.S.C. § 170(h)(5)(A).
108 *See* GBX Assocs., LLC v. United States, No. 1:22CV401, 2022 WL 16923886, at *18 (N.D. Ohio Nov. 14, 2022) (declaring that Notice 2017-10 is unlawful and setting that Notice aside pursuant to APA § 706(2)"); *see also* Green Valley Invs., LLC v. Comm'r of Internal Rev. Serv., 159 T.C. 5, *14 (2022).
109 *See* Kat Lucero, *New Easement Law May Render IRS Reporting Rule Unneeded*, LAW360 TAX AUTH. (Mar. 2, 2023, 4:08 PM), https://www.law360.com/tax-authority/articles/1580662/new-easement-law-may-render-irs-reporting-rule-unneeded.

penalty.[110] The main difference is that the Integrity Act deters transactions in the future and the proposed rule would require reporting past transactions to the IRS.[111]

There have also been concerns about possible holes in the proposed rules targeting these conservation easements. For example, the Integrity Act already addressed the valuation problem of certain conservation easements by SCEs.[112] Practically speaking, many of the conservation easement donations listed in the proposed rule would be nondeductible.[113] The proposed rule also retains similar qualities to the rejected Notice 2017-10. Namely, it requires listing SCEs as reportable transactions and includes procedures to report those deals.[114]

C. PERPETUITY CASES

CEs made exclusively for conservation purposes must exist in perpetuity.[115] Perpetuity is the core aspect of a CE and is central to the underlying policy considerations.[116] Perpetuity is the most common way the IRS targets CE deductions, and the IRS' resulting victories prompted the recent Settlement Initiative.[117] More than twenty

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110 *Id.*
111 *Id.*
112 *Id.*
113 *See* Syndicated Conservation Easement Transactions as Listed Transactions, 87 Fed. Reg. 75,185 (proposed Dec. 8, 2022) (to be codified at 26 C.F.R. pt. 1); *see also* Charitable Conservation Easement Program Integrity Act, S.2256, 117th Cong. § 1104 (2021).
114 *See* Syndicated Conservation Easement Transactions as Listed Transactions, 87 Fed. Reg. at 75,185 ("Form 8886, *Reportable Transaction Disclosure Statement* (or successor form)—must be attached to the taxpayer's tax return for each taxable year for which a taxpayer participates in a reportable transaction. A copy of the disclosure statement must be sent to the IRS's Office of Tax Shelter Analysis (OTSA) at the same time that any disclosure statement is first filed by the taxpayer pertaining to a particular reportable transaction."); *see also* I.R.S. Notice 2017-10, I.R.B. 2017-4 I.R.B. 544 (stating the failure to file a required Form 8886 carries significant consequences, including a penalty of 75% of any tax savings, capped at $100,000 for natural persons and $200,000 for other entities).
115 26 U.S.C. § 170(h)(5).
116 *See* Ann Taylor Schwing, *Perpetuity Is Forever, Almost Always: Why It Is Wrong to Promote Amendment and Termination of Perpetual Conservation Easements*, 37 HARV. ENV'T. L. REV. 217, 221 (2013) (noting there is only one limited exception to perpetuity, discussed *infra* note 128 and accompanying text).
117 *See* IR-2020-130.

cases have been decided on perpetuity grounds, and of those cases, the taxpayers only prevailed in three.[118] This disparity shows (1) the importance of perpetuity as the cornerstone of CEs, and (2) the IRS and the Tax Court's determination to ensure that CEs truly exist in perpetuity. The IRS and the Tax Court go to great lengths to determine whether a CE deed violates perpetuity.[119] After the IRS and the Tax Court strike a CE's perpetuity, the entire deduction is prohibited.

One unique pro-taxpayer case was decided in 2012.[120] In *Irby*, the IRS challenged an extinguishment clause of the CE deed, claiming the conservancy would not get its fair share upon extinguishment.[121] This made the deed "superficial" and, therefore, not exclusively for conservation purposes.[122] Unlike other extinguishment clause cases, this specific clause provided for the donee (a government-funded organization) to repay the government upon extinguishment of the easement.[123] The IRS argued that this deprived the donee of their proportionate share under the regulation.[124] However, the court reasoned that this situation was different since the donor would not receive a windfall as a result of the extinguishment of the easement.[125] Simply put, what happens to the donee's proportionate share apart from the donor is beyond the scope of the regulation.[126] Therefore, the court disagreed with the IRS and upheld the clause and the easement.[127]

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118 *See, e.g.*, BC Ranch II, L.P. v. Comm'r of Internal Rev. Serv., 867 F.3d 547 (5th Cir. 2017); Gorra v. Comm'r of Internal Rev. Serv., 106 T.C.M. (CCH) 523 (T.C. 2013).
119 *See, e.g.*, Oakbrook Land Holdings, LLC, v. Comm'r of Internal Rev. Serv., 119 T.C.M. (CCH) 1352 (T.C. 2020).
120 Irby v. Comm'r of Internal Rev. Serv., 139 T.C. 371 (2012).
121 *Id.* at 379–80.
122 *Id.* at 380.
123 *Id*.
124 *See id.* at 381.
125 *Id.* at 380–85.
126 *See id.* at 384.
127 *Id*. at 390.

The most influential CE case as of late is *Oakbrook Land Holdings, LLC v. Commissioner*.[128] Before the holding was affirmed by the Sixth Circuit on appeal, it was used to strike down several CEs.[129] In *Oakbrook*, the taxpayer bought a 143-acre piece of land and donated 106 acres to a local conservancy.[130] The IRS challenged the extinguishment clause of the CE deed.[131] CE deeds often contain extinguishment clauses, which outline the division of hypothetical proceeds from a future hypothetical extinguishment of the CE.[132] Although CEs must exist in perpetuity, the regulations provide a very limited avenue to dissolve them.[133]

> If a subsequent unexpected change in the conditions surrounding the property that is the subject of a donation . . . make impossible or impractical the continued use of the property for conservation purposes, the conservation purpose can . . . *be treated as protected in perpetuity* if the restrictions are extinguished by judicial proceeding and all of the donee's proceeds . . . from a subsequent sale or exchange of the property are used by the donee organization in a manner consistent with the conservation purposes of the original contribution."[134]

The following section governs the distribution of the extinguishment proceeds between the parties:

> For a deduction to be allowed under this section, at the time of the gift the donor must agree that the donation of the perpetual conservation restriction gives rise to a property right, immediately vested in the donee organization, with a fair market value that is at least equal to the proportionate value that the perpetual conservation restriction at the time of the gift, bears to the value of the property as a whole at that time. . . . For purposes of this paragraph(g)(6)(ii), that proportionate value of the donee's property rights shall remain constant. *Accordingly, when a change in conditions give rise*

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128 *Oakbrook*, 119 T.C.M. 1352.

129 *See, e.g.*, Plateau Holdings, LLC v. Comm'r of Internal Rev. Serv., 119 T.C.M. (CCH) 1619 (T.C. 2020); Lumpkin HC, LLC v. Comm'r of Interal Rev. Serv., 119 T.C.M. (CCH) 1631 (T.C. 2020).

130 Oakbrook Land Holdings, LLC v. Comm'r of Internal Rev. Serv., 28 F.4th 700, 708 (6th Cir. 2022), *cert. denied*, 143 S. Ct. 626 (2023).

131 *Id.* at 1.

132 *Id.* at 1–2.

133 26 C.F.R. § 1.170A-14(g)(6).

134 *Id.* § 1.170A-14(g)(6)(i) (emphasis added).

> *to the extinguishment of a perpetual conservation restriction under paragraph (g)(6)(i) of this section, the donee organization, on a subsequent sale, exchange, or involuntary conversion of the subject property, must be entitled to a portion of the proceeds at least equal to that proportionate value of the perpetual conservation restriction*, unless state law provides that the donor is entitled to the full proceeds from the conversion without regard to the terms of the prior perpetual conservation restriction."[135]

In other words, even though CEs with extinguishment clauses may not be perpetual in fact, they can be "treated as protected in perpetuity" if the extinguishment clause complies with the regulations.[136] Accordingly, the regulations provide that, upon extinguishment, the donee is entitled to a "proportionate share" of the subsequent proceeds.[137] In *Oakbrook*, the IRS argued that the deed's extinguishment clause did not provide for the donee to get their "proportionate share."[138] Instead, the extinguishment clause provided that, upon extinguishment and subsequent sale, the donee "shall be entitled to a portion of the proceeds equal to the fair market value of the conservation easement."[139] The IRS argued that this provision did not comply with the regulation as the donee should get a "proportionate share"—meaning a fractional share, not a fixed value.[140]

The taxpayers argued the regulation says "value" and not "share," thus, the whole number in their deed should be allowable.[141] The IRS maintained that the regulation prohibits any scenario in which a donor gets to recover compensation other than a proportionate share (a fraction) of the proceeds, with the proportion defined by the easement's FMV over the unencumbered and unimproved property's FMV.[142] The Tax

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135 *Id.* § 1.170A-14(g)(6)(ii) (emphasis added).
136 *Id.* §§ 1.170A-14(g)(6)(i), 1.170A-14(g)(6)(ii).
137 *Id.* § 1.170A–14(g)(6)(ii).
138 *Oakbrook*, 119 T.C.M. (CCH) 1352 at 11.
139 *Id.* at 6.
140 *See id.* at 8.
141 *Id.* at 11.
142 *Id.* at 11–12.

Court ruled that the IRS interpretation is correct.[143] In sum, the court disallowed the deduction because the extinguishment clause in the CE deed did not comply with the applicable regulations.[144] The clause's existence jeopardized the perpetuity of the CE, making it non-compliant with the regulations.[145] Therefore, it cannot be treated as protected in perpetuity.[146] This defect in the CE deed cost the taxpayers their entire deduction.[147]

In 2022, this reasoning was affirmed on appeal by the Sixth Circuit.[148] The Court held that the Treasury's interpretation of a "proportionate share" calculation made without subtracting the value of any post-donation improvements was entitled to *Chevron* deference.[149] Additionally, the Court found that the regulation for a qualified conservation easement was not arbitrary or capricious because it complied with the APA's procedural requirements.[150]

But in another case, the Eleventh Circuit disagreed with this reasoning.[151] The Eleventh Circuit found that the Treasury failed to respond to "relevant and significant comment from conservancy . . . as to proceeds that would thwart the purpose of the

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143 *Id.* at 9–10.
144 *Id.* at 10.
145 *Id.*
146 *See id.* (referencing Treas. Reg. § 1.170A-14(g)(6)(ii) in the Commissioner's argument).
147 *Id.* at 15.
148 *Oakbrook*, 28 F.4th at 708.
149 *See id.* at 718; *see also* Alliance for Cmty. Media v. FCC, 529 F.3d 763, 776 (6th Cir. 2008) (noting that "considerable weight should be accorded to an executive department's construction of a statutory scheme it is entrusted to administer") (quoting Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc., 467 U.S. 837, 844 (1984)).
150 *Oakbrook*, 28 F.4th at 720.
151 *See* Hewitt v. Comm'r of Internal Rev. Serv., 21 F.4th 1336, 1350 (11th Cir. 2021) ("After careful consideration of the agency record before us, the several opinions in *Oakbrook* and precedent from the Supreme Court, and . . . validity under the APA, we conclude that § 1.170A-14(g)(6)(ii) . . . is arbitrary and capricious under the APA . . . and is thus invalid."); *see also* 5 U.S.C. §§ 553(c), 706(2)(A).

regulation."[152] Ultimately, the court held that the Treasury's regulation was invalid.[153]

On April 10, 2023, the IRS published a Notice that provides safe harbor deed language to comply with Section 605 of the Secure 2.0 Act.[154] But the Notice failed to address *Hewitt's* criticism of the Treasury's 1.170A regulation.[155] The notice provided easement donors with ninety days from the date the notice was published to amend the language in existing conservation deeds.[156]

D. VALUATION CASES

Even after the dust settles from the IRS's attack on SCE deductions, taxpayers will not know whether to expect a deduction for SCEs. But the imperfections in deeds can be fixed and adjusted by those still seeking to create SCE transactions and future drafters can avoid the pitfalls that have caused other CEs to crumble. In addition to exclusivity and perpetuity, the IRS can strike down CEs by challenging valuations.[157] Valuations could be the underlying reason that the IRS disfavors SCE transactions, and whether the IRS's Settlement Initiative succeeds might not matter to the IRS because the courts can ultimately settle the dispute if necessary.[158] The IRS targets people and groups that it believes are abusing CEs for large tax savings.[159]

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152 *Hewitt*, 21 F.4th at 1345.

153 *Id.* at 1350 (holding that 26 C.F.R. § 1.170A-14(g)(6)(ii) is invalid).

154 I.R.S. Notice 2023-30; *see also* Lauren Vella, *IRS Issues Safe Harbor Deed Language for Conservation Easements (1)*, BLOOMBERG TAX (Apr. 10, 2023, 8:00 AM), https://www.bloomberglaw.com/product/tax/bloombergtaxnews/employee-benefits/X20HO864000000?bna_news_filter=employee-benefits#jcite; *see also* SECURE 2.0 Act, P.L. NO. 117-328, 136 Stat. 4459 (2022).

155 I.R.S. Notice 2023-30; *Hewitt*, 21 F.4th 1350.

156 I.R.S. Notice 2023-30.

157 26 C.F.R. § 1.170A-14(h).

158 Kristen A. Parillo, *Criticism of Easement Settlement Deal Doesn't Worry IRS*, TAXNOTES (Jul. 15, 2020), https://www.taxnotes.com/tax-notes-today-federal/charitable-giving/criticism-easement-settlement-deal-doesnt-worry-irs/2020/07/15/2cqf4.

159 *See* IR-2020-130.

The SCE valuations are problematic because they relate directly to the amount of the subsequent deductions, and thus incentivize inflated valuations for some taxpayers. The value of a CE is the difference between the FMV of the land before the easement and the FMV of the land after the easement.[160] Theoretically, this value should reflect the forgone value of development rights on the land. It is standard practice to value property at its HBU.[161] However, determining the HBU and corresponding monetary value is highly subjective and therefore highly contestable.

Unfortunately, the existing Treasury regulations do not provide helpful guidance on the valuation of CEs.[162] The regulation states that: (1) the value of the easement is the fair market value; (2) if there are relevant comparable transactions, the fair market value should be based on those; (3) if there are no relevant comparable transactions then the fair market value equals the difference between the value before the easement and the value after the easement; and (4) that this value is the value of the deduction.[163] This lack of helpful regulation might make predicting a court's analysis in a valuation challenge more difficult.

E. THE IRS SETTLEMENT INITIATIVE

Leveraging recent Tax Court victories, the IRS issued a news release in June 2020 describing a potential path to resolution (the Settlement Initiative) and sent offer letters to eligible partnerships.[164] Opinions on the Settlement Initiative vary. Many see the Settlement Initiative as the IRS "walking softly and carrying a big stick" as opposed to

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160 26 C.F.R. § 1.170A-14(h)(3)(i).
161 *See* Frazee v. Comm'r of Internal Rev. Serv., 98 T.C. 554, 563 (1992).
162 *See* 26 C.F.R. § 1.170A-14(h)(3)(i).
163 *Id.*
164 IR-2020-130; *see also* Sheppard, *supra* note 16, at 2219; Hale E. Sheppard, *Conservation Easement Settlement Initiative: More IRS Guidance, More Uncertainty*, 169(7) TAX NOTES FED. 1085 (2020).

extending an olive branch.[165] Mainly, this is because participation in the program does not prohibit the IRS from penalizing a participant in the future.[166] These penalties include criminal penalties, promoter penalties, appraiser penalties, return preparer penalties, or any other penalty available to the IRS.[167]

The Settlement Initiative also separates partners into two categories. Category One Partners "organized, sold, or promoted [an SCE]; prepared an appraisal; provided legal or tax advice; supplied return preparation services; or took [any other] actions making them 'material advisors.'"[168] These individuals receive a zero-dollar charitable deduction and a 40% penalty.[169]

On the other hand, Category Two Partners can claim their ordinary tax deduction equal to the costs paid to participate in the SCE, which could include cash or other property.[170] Penalties for the Category Two Partners are 10–20%.[171] Under this arrangement, Category Two Partners pay one quarter to one half of the Category One Partner penalties. The disparity between penalties could turn the partners against each other, which could lead to litigation. The IRS might have considered this outcome and pursued this disparity to divide partners.[172] At the end of the day, participation ultimately pits investor partners against promotors.[173] Litigation promises only uncertainty, and

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165 Hale E. Sheppard, *Depriving Partnerships of Access to the Independent Office of Appeals: Old and New IRS Challenges to Conservation Easements*, TAXES THE TAX MAG., 2021, at 48.
166 26 U.S.C. § 7121(b).
167 IR-2020-130.
168 Sheppard, *supra* note 164, at 48.
169 *Id.*
170 *Id.*
171 *Id.*
172 *Id.*
173 Guinevere Moore, *IRS Settlement Program for Syndicated Conservation Easements Announced*, FORBES (Jun. 26, 2020, 12:23 PM), https://www.forbes.com/sites/irswatch/2020/06/26/irs-settlement-program-for-syndicated-conservation-easements-announced/#33ea36f7e3cf.

settlement could offer minimal relief for investors, while ensuring disappointment for promoters. Taxpayers should carefully consider the strength of their cases, the durability of their valuations, the penalties at stake, and the costs of litigation before participating in the IRS Settlement Initiative offer.

IV. THE LEGISLATIVE HISTORY REGARDING EASEMENTS IN THE CONSOLIDATED APPROPRIATIONS ACT OF 2023 (P.L. 117–328).

In June 2021, the Senate introduced the Integrity Act.[174] The Integrity Act imposed a tax deduction limitation for qualified conservation contributions made by certain partnerships if the amount of the contribution exceeded 2.5 times the sum of each of the partner's relevant basis in the partnership.[175] Under this version of the bill, the deduction disallowance would apply retroactively to December 2016, which is the date the IRS issued Notice 2017-10, 2017-4 IRB 544, and designated SCEs as listed transactions.[176] Some groups argued that the retroactive effective date was unfair and punitive.[177] Later, in 2022, the Senate Finance Committee voted to add a provision that would disallow tax benefits from SCE deals without retroactive effect to a proposed retirement bill.[178]

Committee members approved an amendment to the EARN Act that used proceeds from a modified version of the Integrity Act to offset the costs of a tax break for disabled first responders.[179] Then Finance Committee members voted the EARN Act out of committee unanimously.[180] The June 22, 2022 version adopted by the Finance Committee

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174 Charitable Conservation Easement Program Integrity Act of 2021, S.2256, 117th Cong. § 1 (2021).
175 *Id.* at § 2.
176 Parillo, *supra* note 25.
177 *Id.*
178 *Id.*
179 *Id.*
180 *Id.*

states the disallowance rule and any associated penalties would apply only to easement donations made after the enactment date.[181] The new version also added a curing provision allowing donors in non-syndicated easement transactions to modify defective deed language involving extinguishment clauses.[182]

While the Integrity Act did not make it into the EARN Act in 2022, it did appear in Congress's December 29, 2022 Omnibus Act.[183] There were many notable changes included in the Omnibus Act: (1) the deduction disallowance rules will apply prospectively, rather than retroactively from December 23, 2016 (the date Notice 2017-10 was promulgated);[184] (2) an exception for deduction disallowances for easements that are given to certified historic structures was added so long as the reporting requirements in Section 170(f)(19) are satisfied;[185] and (3) a requirement that the Treasury publishes safe-harbor guidance for deed language extinguishment clauses and boundary adjustments within 120 days of the effective date.[186]

The Omnibus Act (specifically, the SECURE Act 2.0 portion) also amended Section 170(h) to disallow contributions made by a partnership that exceeds 2.5 times the sum of each partner's relevant basis in such partnership with three exceptions: (1) contributions made outside a three-year holding period; (2) family limited partnerships; and (3) conservations made for the preservation of a qualified historic structure.[187] Although this change aimed to shut down SCEs, it still failed to address a more

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181 Parillo, *supra* note 25.
182 *Id.*
183 *See* Consolidated Appropriations Act of 2023, Pub. L. No. 117-328, 136 Stat. 4459.
184 *Cf.* Charitable Conservation Easement Program Integrity Act, S.2256, 117th Cong. § 1104 (2021); Consolidated Appropriations Act § 605.
185 *See* Consolidated Appropriations Act § 605; *see also* 26 U.S.C. § 170(h)(4)(C).
186 Secure 2.0 Act of 2022, P.L. NO. 117-328 § 605, 136 Stat. 5395-96 (2022).
187 *See id.*; 26 U.S.C. § 170(h)(7)(E).

fundamental problem—the overvaluation.[188] Because these evaluations typically use the HBU before and after the donation, many easements are considered overvalued.[189]

The evaluation problem is not just limited to syndicated partnerships. For example, in *Brooks v. Commissioner*, the court denied a couple's $2.1 million deduction of an easement donated to the Georgia county government.[190] The court reasoned that the appraiser's valuation was very flawed and inflated the value of the easement by *sixfold* from the year the property was purchased before.[191] In another case, a taxpayer's deduction of $11 million for 176 acres in South Carolina was disallowed because the land had appreciated by nearly 900% in only sixteen months.[192]

Lastly, on December 18, 2022, the IRS issued a proposed regulation regarding SCEs.[193] Similar to Notice 2017-10, this proposed regulation identifies SCEs and other similar transactions as reportable, which requires additional disclosures.[194] Contrary to Notice 2017-10, this proposal contains the following elements specifying the definition of an SCE transaction: (1) the 2.5 times rule regarding an investors passthrough of an allocated charitable deduction;[195] (2) the taxpayer becomes an investor in the entity; (3) the passthrough entity that owns such real property contributes an easement of such real property; (4) then, the taxpayer claims a charitable deduction on their federal tax return.[196]

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188 Kat Lucero, *New Easement Law Sidesteps Issue Of Inflated Appraisals*, LAW360 TAX AUTH. (Mar. 17, 2023, 4:56 PM), https://www.law360.com/tax-authority/articles/1586928/new-easement-law-sidesteps-issue-of-inflated-appraisals.

189 *Id.*

190 Brooks v. Comm'r of Internal Rev. Serv., T.C.M. (RIA) 2022-122 (T.C. 2022).

191 *Id.* at 12.

192 Thompson v. Comm'r of Internal Rev. Serv., 124 T.C.M. (CCH) 51 (T.C. 2022).

193 Syndicated Conservation Easement Transactions as Listed Transactions, 87 Fed. Reg. 75,185 (proposed Dec. 8, 2022) (to be codified at 26 C.F.R. pt. 1).

194 *Id.* at 75,187.

195 *Id.* at 75,187 (§ 1.6011-9(b)).

196 *Id.* at 75,191.

The proposed rule also removes a carveout for tax-exempt entities who enter into SCEs.[197] If the IRS removes this exemption under Section 4965, nonprofits that unknowingly received a listed SCE would be penalized.[198] Doing away with this carveout could have unintended consequences and disincentivize tax-exempt entities to engage in conservation easement donations.[199] Additionally, these conservation easements are an important part of President Biden's "America the Beautiful" initiative.[200] Under this plan, President Biden seeks to conserve 30% of U.S. lands and waters by the year 2030.[201] It will be difficult to reach the Biden Administration's goal if the IRS disincentivizes CEs by removing this exception.[202]

V. ANALYSIS

In general, the Tax Court is hesitant to find an easement was made exclusively for conservation purposes. The Tax Court prefers to weigh the particular facts and circumstances in each case for itself. In doing so, the Tax Court fails to create an identifiable standard to be applied unilaterally in each of these cases. Instead, what is "significant" is weighed differently for different reasons in each case. Questions begin to arise, such as: How much of the land is perpetually an easement? Does commercial activity on part of the land disqualify the totality of the land for the deduction? If not, is it proportionately disqualified? If so, is commercial activity of any level worthy of

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197 *Id.* at 75192.
198 26 U.S.C. § 4965; 87 Fed. Reg. at 75,193.
199 Kat Lucero, *Easement Rule Shouldn't Penalize Nonprofits, IRS Told*, LAW360 TAX AUTH. (Mar. 1, 2023, 4:14 PM), https://www.law360.com/tax-authority/articles/1581153/easement-rule-shouldn-t-penalize-nonprofits-irs-told.
200 *Id.*
201 *America the Beautiful*, U.S. DEPT. OF THE INTERIOR (Aug. 24, 2023, 2:17 PM), https://www.doi.gov/priorities/america-the-beautiful.
202 *See* Lucero, *supra* note 188.

disqualification? Is there a minimum acceptable level of commercial activity before either a total or proportional disqualification applies? Just to name a few.

Although the Eleventh Circuit leans towards favoring taxpayers and interpreting the applicable regulations quite broadly, the Tax Court has resisted this interpretation and construes the regulations narrowly.[203] Right now, the IRS largely hangs their hat on technical errors which render CE deductions wholly invalid.[204] This is the crux of the challenges the IRS mounts against promoters, partnerships, and their taxpayer clients.

The Court in *Oakbrook* also acknowledged a Fifth Circuit precedent that the regulations were ambiguous, and when U.S. Treasury regulations are ambiguous, courts should defer to the issuing agency.[205] Curiously, the courts have found that though the IRS did not have a "plain reading" it still arrived at the correct conclusion by using technical rules to disallow the charitable conservation easement deductions.[206] However, technicality battles seem insignificant once taxpayers realize that, even if they win these, the valuation battle is just around the corner.

The SCE valuations are problematic because they directly relate to the amount of the subsequent deductions. This incentivizes taxpayers to declare the highest possible difference in valuations to declare the highest possible deduction. So, when taxpayers declare deductions stemming from a shocking difference in the land valuations before versus after the CE, the IRS must believe taxpayers are only pursuing the CE for the tax savings. Unfortunately, the Treasury regulations pertaining to CE valuation are not

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203 Pollard v. Comm'r of Internal Rev. Serv., 105 T.C.M. (CCH) 1249 (T.C. 2013).
204 *See Oakbrook*, 119 T.C.M. (CCH) 1352 at 2; *see also* IR-2020-130.
205 *Oakbrook*, 119 T.C.M. (CCH) 1352 at 23.
206 *Id.*

instructive. The Tax Court avoids addressing valuation if it has any other way to extinguish these CEs.[207] The results of past valuation cases have varied. Most of the time, the courts applied post-CE valuations far below those of the taxpayers.[208] This reduction in post-CE value significantly reduces the difference in valuations of the property before and after the CE, thereby reducing the deduction associated with it. Altogether, the return on investment for those involved in SCE transactions seems bleak.

VI. CONCLUSION

The IRS is targeting SCEs, and the Tax Court seems aggressively hostile to SCE transactions. The main challenges to SCEs are based on whether: (1) the charitable contributions are exclusively for conservation purposes; (2) there is faulty language in the deed making the associated deduction disallowable; and (3) all valuations are correctly calculated. Soon, challenges will likely shift from these issues to valuation.

The cumulative effect of recent IRS actions (such as eliminating the appraisal penalty review process, attempting to completely strike down deductions for SCEs, and offering a one-sided Settlement Initiative) amounts to the IRS discouraging SCEs, which could contravene congressional intent.

With the new limit on the tax deduction for qualified conservation contributions made by certain partnerships, the IRS is poised to attack SCEs. Some taxpayers could lose their entire deduction, and some will pay an additional 40% penalty.[209] The odds of a taxpayer walking away with their full deduction are slim to none. For now, taxpayers face

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207 *See, e.g.*, *Oakbrook*, 119 T.C.M. (CCH) 1352 at 34.

208 *See, e.g.*, *Champions*, 959 F.3d 1033 at 1041 (noting the Tax Court did not address the proper amount of the valuation).

209 IR-2020-130.

a difficult choice: premature surrender or a tedious gamble.

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A Promise Made is Not a Promise Kept: Scaling Voluntary Carbon Markets Accountability with Federal Agency Collaboration

By Nicholas Espenan

I. Introduction to the Current Voluntary Carbon Market Infrastructure 67

A. History and Creation of Voluntary Carbon Markets 68

B. Differences between a Compliance Market and Voluntary Market 71

C. The Current State of the Voluntary Market in the U.S. 73

II. Lack of Standardization 76

A. Carbon Registries Standard Fragmentation 76

B. Trust and Transparency 83

III. Additionality and Permanence Concerns 85

A. Lack of Additionality Criteria Resulting in Faulty Carbon Credits 86

B. Lacking Permanence Criteria 90

C. Impact of Faulty Carbon Credits 92

IV. Solving VCM Scaling Issues with Potential Market Regulations 94

A. Commodities Futures Trading Commission 96

B. The Securities and Exchange Commission (SEC) 101

C. The Environmental Protection Agency 106

D. CFTC Regulation 107

1. Self-Regulatory Organizations (SROs) 110

2. Interagency Collaborative Effort Governance 113

3. Limitations and Unintended Consequences 116

V. Conclusion 118

I. INTRODUCTION TO THE CURRENT VOLUNTARY CARBON MARKET INFRASTRUCTURE

Voluntary carbon markets (VCMs) have emerged as a key instrument in the fight against climate change, providing a market-based approach to reducing greenhouse gas (GHG) emissions. A VCM enables individuals, businesses, governments, and non-governmental organizations to offset their carbon emissions by purchasing carbon credits or offsets.[1] Each offset represents the equivalent of one ton of carbon dioxide (CO_2) reduction or removal, and individuals or companies purchase these credits to offset their own GHG emissions.[2] Unlike compliance markets, participation in these markets is optional, and carbon credits are created, verified, and traded outside of government regulations.[3] The proceeds from these purchases are invested in a wide range of emissions reduction projects.[4]

This section focuses on the current state of the VCM in the United States (U.S.) and discusses the transaction processes for credit generators and end consumers. The section also highlights the key issues facing the VCM and offers insight into potential solutions to

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1 ANJA KOLLMUSS ET AL., MAKING SENSE OF THE VOLUNTARY CARBON MARKET: A COMPARISON OF CARBON OFFSET STANDARDS 6 (2008); *see also Mandatory & Voluntary Offset Markets*, CARBON OFFSET GUIDE, SEI & GHG MGMT. INST., https://www.offsetguide.org/understanding-carbon-offsets/carbon-offset-programs/mandatory-voluntary-offset-markets/ (last visited Oct. 7, 2023).

2 Sam Headon, *Offsets in The International Emissions Market: Do Buyers Get What They Pay For?*, 2 CARBON & CLIMATE L. REV. 406, 406–07 (2008).

3 *See* Allegra Dawes et al., *Voluntary Carbon Markets: A Review of Global Initiatives and Evolving Models*, CSIS (May 31, 2013), https://www.csis.org/analysis/voluntary-carbon-markets-review-global-initiatives-and-evolving-models.

4 *See id.*

overcome these challenges.

A. HISTORY AND CREATION OF VOLUNTARY CARBON MARKETS

The adoption of the Kyoto Protocol in 1997 played a pivotal role in the takeoff of the VCM, particularly due to the creation of the Clean Development Mechanism (CDM).[5] The CDM, in theory, encouraged GHG mitigation and promoted sustainable development by enabling industrialized countries (countries included in "Annex I" of the Kyoto Protocol) to invest in emission-reduction projects in other countries, which could then allow countries to meet reduced emission targets in a more cost-effective manner.[6] The CDM is still operational, and its Executive Board certifies the achieved emission reductions from carbon offset projects.[7] Annex I countries can use these certified "credits" to fulfill a portion of their Kyoto Protocol targets.[8] The CDM used a market-based approach to provide flexible and cost-effective solutions to address climate change.[9] Although establishing the CDM was not the sole driver behind the VCM's development, the CDM provided a blueprint for developing and certifying projects within the VCM.[10] The CDM inspired the creation of four major institutions that now structure

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5 *See Mechanisms Under the Kyoto Protocol*, UNITED NATIONS: CLIMATE CHANGE, https://unfccc.int/process/the-kyoto-protocol/mechanisms (last visited Oct. 7, 2023); *see also* HANDBOOK OF ENVIRONMENTAL AND SUSTAINABLE FINANCE 22–23 (Vikash Ramiah & Greg N. Gregoriou eds., 2016).

6 *See What is the CDM*, THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, https://cdm.unfccc.int/about/index.html (last visited Jan. 2, 2023).

7 *The Clean Development Mechanism*, UNITED NATIONS: CLIMATE CHANGE, https://unfccc.int/process-and-meetings/the-kyoto-protocol/mechanisms-under-the-kyoto-protocol/the-clean-development-mechanism (last visited Oct. 7, 2023).

8 *What is the CDM*, *supra* note 6.

9 *See The Clean Development Mechanism, supra* note 7 ("The mechanism stimulates sustainable development and emission reductions, while giving industrialized countries some flexibility in how they meet their emission reduction or limitation targets.").

10 Sebastian Lang et al., *What Future for the Voluntary Carbon Offset Market after Paris? An Explorative Study Based on the Discursive Agency Approach*, 19 CLIMATE POL'Y 416, 416–17 (2019).

the VCM.[11] These include voluntary standards, standard-setting organizations, third-party verification, and independent carbon credit registries.[12] These institutions established the rules necessary to ensure the credibility and marketability of carbon credits.[13]

According to Ecosystem Marketplace, an environmental nonprofit specializing in carbon markets, the VCM experienced its first significant surge in growth between 2005 and 2006, expanding by almost 200%.[14] Based on surveys conducted among buyers, they engaged in the market primarily to fulfill corporate social responsibility objectives and to demonstrate a commitment to environmental stewardship.[15] A few respondents from the survey reported that, in 2007, they saw a doubling, tripling, or an even larger scale of growth in voluntary offsets transactions.[16] Additionally, major consumer-facing organizations like Dell, Delta, Google, Pacific Gas & Electric, Yahoo, and Nike announced that they will purchase offsets from the voluntary markets.[17] As more companies and individuals have opted to go "carbon neutral," the VCM has shown similar signs of growth. Ecosystem Marketplace claims that since last publishing their State of Forest Carbon Finance report in 2017, the issuance of forest carbon credits has nearly doubled.[18] Between 2017 and 2020, hundreds of companies gained interest in climate action and pledged to be completely carbon neutral in the future.[19] This growing

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11 *Id.*
12 *Id.*
13 *Id.*
14 KATHERINE HAMILTON ET AL., STATE OF THE VOLUNTARY CARBON MARKETS 2007: PICKING UP STEAM 5 (2007).
15 *Id.* at 6.
16 *Id.* at 54.
17 *Id.*
18 Michael Jenkins, *Foreward to* PATRICK MAGUIRE ET AL., A GREEN GROWTH SPURT, STATE OF FOREST CARBON FINANCE 2021 (2021).
19 *See* Camila Domonoske, *Better Late Than Never? Big Companies Scramble to Make Lofty Climate Promises*, NPR (Feb. 27, 2020), https://www.npr.org/2020/02/27/806011419/better-late-than-never-big-companies-scramble-to-make-lofty-climate-promises.

demand led to the introduction of more carbon calculation standards.[20] As of 2021, the VCM had issued nearly 300 million carbon credits in total and is projected to grow to 678 million credits by 2027.[21]

The emergence of the VCM holds great importance, as it offers a voluntary approach for individuals, organizations, and companies to tackle climate change and counterbalance their carbon emissions.[22] It allows a flexible and innovative mechanism to mitigate the negative impacts of carbon emissions, providing individuals and companies opportunities to demonstrate their commitment to sustainability and reduce their carbon footprint.[23] This in turn promotes investment in low-carbon projects and technologies, furthering the development of clean energy and emissions-reducing initiatives.[24] Additionally, the VCM provides companies with a means of engaging with their customers and stakeholders on environmental issues, improving their reputation and building trust in their brands.[25] It also enables the development of new business models and revenue streams for companies focused on sustainability.[26] Directing financial resources toward low-carbon projects contributes to a more sustainable future for all.[27]

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20 DANICK TROUWLOON ET AL., UNDERSTANDING THE USE OF CARBON CREDITS BY COMPANIES: A REVIEW OF THE DEFINING ELEMENTS OF CORPORATE CLIMATE CLAIMS (2023).

21 Press Release, ReportLinker, Global Voluntary Carbon Market: Analysis By Value, By Traded Volume, By Credit Retirements, By Credit Issuance, By Project Category, By Type of Project, By Region Size and Trends with Impact of COVID-19 and Forecast up to 2027 (Dec. 8, 2022) https://www.globenewswire.com/news-release/2022/12/08/2570013/0/en/global-voluntary-carbon-market-analysis-by-value-by-traded-volume-by-credit-retirements-by-credit-issuance-by-project-category-by-type-of-project-by-region-size-and-trends-with-imp.html.

22 *See* Michael Gillenwater et al., *Policing the Voluntary Carbon Market*, 6 NATURE CLIMATE CHANGE 85 (2007).

23 *See id.*

24 *See* Dong-Ho Lee et al., *Characteristics of Forest Carbon Credit Transactions in the Voluntary Carbon Market*, 18 CLIMATE POL'Y 235 (2018).

25 *See id.* at 238.

26 *Id.* at 236.

27 *See id.* at 243.

B. DIFFERENCES BETWEEN A COMPLIANCE MARKET AND VOLUNTARY MARKET

Both voluntary and compliance carbon markets can effectively reduce GHG emissions, but they achieve this goal in different ways with separate strengths and weaknesses.[28] Compliance carbon markets more effectively achieve large-scale emissions reductions.[29] The emissions caps set in compliance markets provide clear and legally binding targets for emissions reductions, and companies that exceed their emissions allowances can be penalized.[30] Compliance markets also have a higher level of government oversight, which helps to ensure that emissions reductions are real, additional, and permanent.[31]

Conversely, VCMs more effectively engage a wider range of entities and encourage early action.[32] Because there are no legal requirements for participation, a wider range of companies, organizations, and even individuals can participate in voluntary markets.[33] Also, VCMs allow companies and organizations to voluntarily offset their emissions and demonstrate their commitment to reducing their carbon footprint, even if they are not yet ready or able to reduce their emissions directly.[34]

Both markets have limitations. Compliance markets may be less flexible and

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28 *See id.* at 236–37.

29 *See* Jordi Teixidó et al., *The Impact of the EU Emissions Trading System on Low-Carbon Technological Change: The Empirical Evidence*, 164 ECOLOGICAL ECON. 1, 1–2 (2019) ("In general, the empirical literature clearly supports the hypothesis that a more stringent environmental policy gives economic agents stronger incentives to search for ways to avoid compliance costs, thereby promoting technological change.").

30 Jon Birger Skjærseth & Jørgen Wettestad, *Implementing EU Emissions Trading: Success or Failure?*, 8 INT'L ENV'T AGREEMENTS: POL., L. & ECON. 275, 275–90 (2008).

31 DENNY ELLERMAN, THE EU EMISSION TRADING SCHEME: A PROTOTYPE GLOBAL SYSTEM? (2009), https://dspace.mit.edu/bitstream/handle/1721.1/49515/MITJPSPGC_Rpt170.pdf?sequence=1&isAllowed=y.

32 Nicolas Kreibich & Lukas Hermwille, *Caught in Between: Credibility and Feasibility of the Voluntary Carbon Market Post-2020*, 21 CLIMATE POL'Y 939, 939–42 (2021).

33 *See id.*

34 *See id.*

slower to adapt to changing circumstances like fluctuations in emissions levels, new low-carbon technologies, or shifts in the economy.[35] The market is designed to achieve a specific reduction target and may not quickly respond to changing conditions.[36] In addition, the allocation of carbon allowances in compliance markets may not always be effective or equitable.[37] Some industries may receive a higher allocation of allowances, while others may receive a lower allocation, creating imbalances in the market and potentially leading to unintended consequences.[38]

VCMs may face issues ensuring that the credits sold are truly reducing emissions due to the lack of regulation surrounding quality and additionality of carbon credits.[39] The lack of regulation within VCMs could lead to the sale of credits that do not represent genuine emissions reductions, undermining the credibility of the market.[40] A combination of both markets may be more effective, because they would implement different approaches to emissions reduction, which would help to achieve large-scale emissions reductions while also encouraging early action and engagement from a wide range of entities.[41]

In 2021, the U.S. VCM reached $1 billion in value and is projected for further

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35 Alex Barnes et al., *The Evolution of Carbon Markets And Their Role in Climate Mitigation And Sustainable Development,* 132 OXFORD ENERGY F. 1, 17–20 (2022).

36 *See generally* Teixidó et al., *supra* note 29, at 2 (analyzing the effect of the 2008 financial crisis on the EU Emissions Trading System).

37 *See* KOLLMUSS ET AL., *supra* note 1, at 1.

38 *Id.* at 2.

39 *See generally* Teixidó et al., *supra* note 29.

40 *See* RICARDO BAYON ET AL., VOLUNTARY CARBON MARKETS: AN INTERNATIONAL BUSINESS GUIDE TO WHAT THEY ARE AND HOW THEY WORK 56, 86, 97, 99, 100, 134–35 (2nd ed. 2009).

41 *See* Heather C. Lovell, *Governing the Carbon Offset Market*, 1 WIRES CLIMATE CHANGE 353, 360–61 (2010).

growth.[42] Although the compliance carbon credits market currently holds a dominant position in the industry, the VCM operates on a wider scale as it supports a broader range of activities across numerous countries.[43] The Task Force on Scaling Voluntary Carbon Markets (TSVCM), a private sector-led initiative aiming to scale VCMs to align with the Paris Agreement goals, projects that the demand for carbon credits in the VCM could grow by a factor of 15 or more by 2030 and up to 100 by 2050.[44] However, the market still faces issues related to transparency, additionality, and permanence.[45] Additionally, the VCM has received limited information or critical analysis and is relatively less explored.[46] The VCM presents an opportunity for innovation and support for a variety of socially and environmentally beneficial goals.[47] Acknowledging the market's challenges is necessary to ensure the market's success and implement necessary measures for growth and effectiveness in reducing GHG emissions.

C. THE CURRENT STATE OF THE VOLUNTARY MARKET IN THE U.S.

Standards organizations generate carbon credits by verifying the carbon removal represented by a project, and they serve as intermediaries between project owners, developers, and the end users who purchase credits.[48] Standards organizations define a

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42 EM Insights Team, *Voluntary Carbon Markets Top $1 Billion in 2021 with Newly Reported Trades, a Special Ecosystem Marketplace COP26 Bulletin*, ECOSYSTEM MARKETPLACE (Nov. 10, 2021), https://www.ecosystemmarketplace.com/articles/voluntary-carbon-markets-top-1-billion-in-2021-with-newly-reported-trades-special-ecosystem-marketplace-cop26-bulletin/.

43 *Overall Size of Carbon Offset Market: How Big Are They?*, TERRAPASS (June 15, 2023), https://terrapass.com/blog/overall-size-of-carbon-offset-markets/.

44 Christopher Blaufelder et al., *A Blueprint for Scaling Voluntary Carbon Markets to Meet the Climate Challenge*, MCKINSEY SUSTAINABILITY (Jan. 29, 2021), https://perma.cc/4NZW-7AZ7.

45 TASKFORCE ON SCALING VOLUNTARY CLIMATE MARKETS, PHASE 1 – FINAL REPORT 4 (Jan. 2021), https://www.iif.com/Portals/1/Files/TSVCM_Report.pdf.

46 ELIZABETH HARRIS, THE VOLUNTARY CARBON OFFSETS MARKET: AN ANALYSIS OF MARKET CHARACTERISTICS AND OPPORTUNITIES FOR SUSTAINABLE DEVELOPMENT 1–2 (2007).

47 *See id.* at 27.

48 Gregor Spilker & Nick Nugent, *Voluntary Carbon Market Derivatives: Growth, Innovation, Usage*, 22 BORSA ISTANBUL REV. 109, 110–11 (2022).

predetermined set of rules and criteria for voluntary carbon credits and certify proposed projects.[49] The organizations also maintain registries of the projects they have certified over time.[50] Once the offsets are issued, the registries keep track of the transactions and the parties on whose behalf they are retired.[51] Standards organizations are involved from the project's initial application to the final issuance and retiring of the credit—so, project owners and the standards organizations work together cradle to grave for the verification and issuance of carbon credits.[52]

Carbon standards organizations lend credibility to mitigation projects and their associated carbon credits.[53] These standards signify a form of private "self-regulation" where the general public and corporations collaborate to establish quality benchmarks for VCM participation.[54] Although various carbon standards adopt divergent methodologies for evaluating GHG reductions and removals, prominent standards such as the Verified Carbon Standard (VCS), the Gold Standard (GS), the Climate Action Reserve (CAR), and the American Carbon Registry (ACR), prevail.[55] These standards encompass several provisions, including: defining project categories and eligibility, establishing reference levels for evaluating emission reductions and removals, monitoring emissions and displacements, managing risks by implementing discounts and buffers to counteract potential reversals, verifying and certifying, providing sustainable development co-

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49 *Id.*
50 *Id.*
51 *Id.*
52 Charlotte Streck, *How Voluntary Carbon Markets Can Drive Climate Ambition,* 39 J. OF ENERGY & NAT. RES. L. 367, 367–74 (2021).
53 *Id.* at 370.
54 STEPHEN DONOFRIO ET AL., STATE OF THE VOLUNTARY CARBON MARKETS 2020: THE ONLY CONSTANT IS CHANGE, ECOSYSTEM MARKETPLACE (2020).
55 INT'L SWAPS & DERIVATIVES ASS'N, VOLUNTARY CARBON MARKETS: ANALYSIS OF REGULATORY OVERSIGHT IN THE US 26 (2022).

benefits, and promoting participation and consultations.[56] By applying carbon standards and internal requirements, project auditors within standards organizations can ensure that the majority of carbon credits are legitimate. However, despite the existence of such standards, individual projects may still use questionable carbon calculation methods, requiring carbon buyers to conduct appropriate due diligence before acquiring carbon credits.[57]

Currently, a significant portion of issues in the VCM stem from the standards established by standard organizations.[58] The overabundance of carbon calculation standards within the VCM raises concern over the creation of illegitimate credits.[59] The U.S. government has not set any standards regulating the carbon credit market, which has left third parties to sort through the different certifying approaches that remain.[60]

The significant increase in participation within voluntary markets, coupled with structural issues, raises concerns of faulty carbon credits.[61] A lack of standardization in the market increases confusion and misunderstanding with carbon offset calculations.[62] This lack of uniformity within the fragmented VCM causes concerns over quality assurance for

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56 AXEL MICHAELOWA ET AL., OVERVIEW AND COMPARISON OF EXISTING CARBON CREDITING SCHEMES 3–4 (2019); *see also* THIAGO CHAGAS ET AL., A CLOSE LOOK AT THE QUALITY OF REDD+ CARBON CREDITS 6 (2020).

57 *Id.*

58 Rebecca Joy Howard et al., *Unraveling the Notion of "Fair Carbon": Key Challenges for Standards Development*, 70 WORLD DEV. 343, 343–56 (2015).

59 Trevor Salter, *Carbon Cowboys: How to Rein in Deceptive Sellers in the Carbon Offset Market*, 1 GEO. WASH J. ENERGY & ENV'T L. 59, 62 (2010).

60 *See* U.S. GOV'T ACCOUNTABILITY OFF., GAO-08-1048, CARBON OFFSETS 1 (2008) ("The federal government plays a small role in the voluntary market…and no single regulatory body has oversight responsibilities.").

61 Oliver Miltenberger et al., *The Good Is Never Perfect: Why the Current Flaws of Voluntary Carbon Markets Are Services, Not Barriers to Successful Climate Change Action*, 3 FRONTIERS IN CLIMATE, Oct. 2021, at 5.

62 Salter, *supra* note 59, at 62.

the carbon credits.[63] Finally, the market has no apparent answer for consideration of additionality and permanence concerns for faulty carbon offset projects.[64] Development of new federal regulations establishing a rigorous carbon calculation and verification standard would address many of the issues confronting the current market.[65]

II. LACK OF STANDARDIZATION

Currently, no universal or industry-wide standard for the establishment or accreditation of voluntary carbon credits exists.[66] There are five primary carbon registries that validate and verify carbon sequestration projects, and each has its own independent carbon calculation methods.[67] This fragmented market approach creates significant differences over how carbon sequestration should be calculated.[68] Differences on what factors should be considered when creating carbon credits create volatility in prices and undermines consumer confidence.[69]

A. CARBON REGISTRIES STANDARD FRAGMENTATION

The absence of uniformity in the carbon credit market poses a significant

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63 Bayon, *supra* note 40, at 12.

64 Charlotte Streck, *Ensuring New Finance and Real Emission Reduction: A Critical Review of the Additionality Concept*, 5 CARBON & CLIMATE CHANGE GOVERNANCE 158, 158–68 (2011).

65 Raymond Song et al., *How to Build a Trusted Voluntary Carbon Market*, RMI (Sept. 2, 2022), https://rmi.org/how-to-build-a-trusted-voluntary-carbon-market/.

66 *See* Giorgio Baldassarri Höger von Högersthal et al., *Carbon Pricing Paths to a Greener Future, and Potential Roadblocks to Public Companies' Creditworthiness*, J. ENERGY MKTS., June 2020, at 5.

67 Timothy R.H. Pearson, Sandra Brown & Kenneth Andrasko, *Comparison of Registry Methodologies for Reporting Carbon Benefits for Afforestation Projects in the United States*, 11 ENV'T SCI. & POL'Y 490, 490–504 (2008); *see* Ina Lehmann, *When Cultural Political Economy Meets 'Charismatic Carbon' Marketing: A Gender-Sensitive View on the Limitations of Gold Standard Cookstove Offset Projects*, 55 ENERGY RES. & SOC. SCI. 146, 146–54 (2019); *see also* Gregory Valatin, *Additionality and Climate Change Mitigation by the UK Forest Sector*, 85 FORESTRY 445, 445–49 (2012).

68 *See How Shared Value is Calculated for Gold Standard Certified Projects*, GOLD STANDARD, https://www.goldstandard.org/articles/how-shared-value-calculated-gold-standard-certified-projects (last visited Oct. 4, 2023).

69 *See* Zhen-Hua Feng et al., *Carbon Price Volatility: Evidence from EU ETS*, 88 APPLIED ENERGY 590, 592, 594, 597 (2011).

challenge to quality assurance, which is essential to bolster the credibility of the market.[70] A carbon registry's failure to undertake comprehensive research and testing to validate the efficacy of its carbon calculation standard in sequestering CO_2 from the atmosphere may engender defective carbon credits. To ensure quality, a registry ought to ensure that all potential carbon project type standards undergo meticulous peer review of CO_2 calculation methodologies.[71] However, as multiple standard organizations continue to introduce new carbon calculation methods that have yet to pass the peer review process, upholding quality assurance is a daunting task.[72]

The five carbon registries—CAR, ACR, VCS, GS, and the Forest Stewardship Council (FSC)—offer a variety of voluntary carbon offset projects.[73] All five have a rigorous and transparent third-party verification or certification process, and all cover a range of project types, including forestry, renewable energy, and agriculture.[74] One key similarity between the registries is their use of a third-party verification or certification process.[75] This ensures that projects are rigorously reviewed and evaluated by an independent organization.[76] For example, the CAR requires project developers to use an

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70 *See* Lovell, *supra* note 41, at 357; *see also* KOLLMUSS ET AL., *supra* note 1, at 1–2.

71 *See* KOLLMUSS ET AL., *supra* note 1, at 1–2.

72 Chunyu Pan et al., *Key Challenges and Approaches to Addressing Barriers in Forest Carbon Offset Projects*, 33 J. FORESTRY RES. 1111, 1111–15 (2022).

73 Ivy S. So et al., *Voluntary Registry Offset Database*, GOLDMAN SCH. OF PUB. POL'Y: BERKLEY CARBON TRADING PROJECT (May 2023), https://gspp.berkeley.edu/research-and-impact/centers/cepp/projects/berkeley-carbon-trading-project/offsets-database; *see also Carbon and FSC Certification*, FORLIANCE, https://forliance.com/nature-based-project-development/fsc-and-carbon-certification (last visited Sept. 16, 2023).

74 *See* So et al., *supra* note 73.

75 Travis A. Brammer & Drew E. Bennett, *Arriving at a Natural Solution: Bundling Credits to Access Rangeland Carbon Markets*, 44 RANGELANDS 281, 283 (2022).

76 SARAH K. MACK ET AL., *Status and Challenges of Wetlands in Carbon Markets*, *in* WETLAND CARBON & ENV'T MGMT. 411, 411–19 (Ken W. Krauss et al. eds., 2021).

accredited third-party verifier to assess the project's emissions reductions or removals.[77] Similarly, the ACR's third-party verification process includes a site visit and review of project documents to ensure that emissions reductions or removals are real, additional, and permanent.[78]

Many of the registries include a range of project types, including forestry, renewable energy, and agriculture.[79] For example, the VCS has approved over 1,700 projects in more than 80 countries, including renewable energy, forestry, agriculture, and transportation projects.[80] The GS also covers a range of project types, including renewable energy, forestry, and agriculture, and has a particular focus on projects that promote sustainable development and poverty reduction.[81]

Each carbon registry that is involved with the VCM has its own methodology for calculating sequestered carbon and issuing carbon credits—this process is called measurement, reporting, and verification (MRV).[82] Carbon sequestration is the process by which CO_2 is removed from the atmosphere and stored in a long-term reservoir, like

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77 *Verification Body Requirements*, CLIMATE ACTION RSRV. (2018), https://www.climateactionreserve.org/how/verification/how-to-become-a-verifier/ (last visited Oct. 4, 2023).

78 *Verification*, AMERICAN CARBON REGISTRY, https://americancarbonregistry.org/carbon-accounting/old/carbon-accounting/verification (last visited Oct. 4, 2023).

79 *Carbon Offset Projects*, CARBON OFFSET GUIDE, https://www.offsetguide.org/understanding-carbon-offsets/carbon-offset-projects/ (last visited Sep. 5, 2023).

80 *See Verra to Undertake Development of a VCS Biochar Methodology to Unlock its Potential to Mitigate Climate Change*, VERRA (Dec. 10, 2020), https://verra.org/request-for-proposals-development-of-a-vcs-biochar-methodology/.

81 *Projects*, GOLD STANDARD MARKETPLACE, https://marketplace.goldstandard.org/collections/projects (last visited Oct. 4, 2023).

82 So et al., *supra* note 73; *see also What You Need to Know About the Measurement, Reporting, and Verification (MRV) of Carbon Credits*, THE WORLD BANK (July 27, 2022), https://www.worldbank.org/en/news/feature/2022/07/27/what-you-need-to-know-about-the-measurement-reporting-and-verification-mrv-of-carbon-credits.

trees or soil.[83] The amount of carbon sequestration that can be claimed as a carbon offset varies depending on the project type and MRV process used by each registry.[84] Carbon registries differ in how they calculate carbon sequestration in carbon offset projects, so a single credit may represent a different offset value depending on the registry.[85]

In a competitive voluntary market, it is expected that standard organizations have varying project scopes and eligibility requirements to attract specific end buyers. For example, the VCS considers social and environmental co-benefits such as biodiversity conservation and sustainable livelihoods when considering the eligibility of a proposed project.[86] The reasoning for this could be to attract specific end buyers wanting to purchase credits that consider social and environmental co-benefits. The problem lies not in the scope and eligibility of registry project types but in the MRV process that generates the credits. Because each standard organization has a distinct approach to MRV, no single standard exists regarding what constitutes one ton of CO_2 reduction.

Standard organizations vary in their MRV processes in terms of reporting frequency and whether reports need to be made public.[87] Verification procedures differ as well; some organizations do not mandate verification, some are verified by public entities, and some are verified by accredited auditors.[88] For example, the CAR requires

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83 *Carbon Sequestration*, BRITTANICA.COM, https://www.britannica.com/technology/carbon-sequestration (last visited Sep. 16. 2023).

84 *See* CHELSEA ELYSE ET AL., FOREST CARBON CREDITS: A GUIDEBOOK TO SELLING YOUR CREDITS ON THE CARBON MARKET 5–6 (2018).

85 *See* JESSICA CALL & JENNIFER HAYES, U.S. DEP'T OF AGRIC. FS, GEN. TECH. REP. SRS-107, A DESCRIPTION AND COMPARISON OF SELECTED FOREST CARBON REGISTRIES: A GUIDE FOR STATES CONSIDERING THE DEVELOPMENT OF A FOREST CARBON REGISTRY 1–6 (2007).

86 LAMBERT SCHNEIDER, OEKO INSTITUTE, THE CARBON CREDIT QUALITY INITIATE AND NEW RESEARCH ON SUSTAINABLE DEVELOPMENT IMPACTS OF VCM PROJECTS POLICY COMMONS (2022).

87 MICHAELOWA ET AL., *supra* note 56, at 28–30.

88 *Id.* at 4.

monitoring reports for each project but at no specified frequency.[89] Conversely, GS requires an annual report that includes GHG and sustainability metrics for the project.[90] The difference in MRV reporting cadence requirements demonstrates that carbon registries calculate their volume of carbon removal differently, potentially creating faulty credits.

In contrast, a standard that requires monthly audit reports on project health is more reliable in ensuring that sequestration is happening. Longer periods of time between audits could allow the project's health to deteriorate, but in the time between audits, an unhealthy sequestration ecosystem continues to produce the same number of credits as if it were fully healthy. Accordingly, an annual audit report is more effective in identifying a project's deterioration sooner than a biennial report. Thus, the cadence of reporting is crucial.

The VCM offers a variety of approaches to calculating carbon sequestration in carbon offset projects.[91] While this can provide project developers and buyers with a range of options, it can also contribute to market fragmentation.[92] The VCM is largely unorganized and fragmented, and this fragmentation can create confusion for buyers and project developers, who may struggle to navigate the different standards and methodologies offered by the various registries.[93]

The fragmentation of the market can also make it difficult to scale up the market

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89 *Id.* at 30.

90 GOLD STANDARD FOR THE GLOBAL GOALS: PRINCIPLES & REQUIREMENTS 26 (v 1.2 2019), https://globalgoals.goldstandard.org/101-par-principles-requirements/.

91 *See* ERIC NOWAK ET AL., VOLUNTARY CARBON MARKETS: A SIX WHITE PAPER 3, 14 (2022) (stating that the VCM is largely "unorganized" implying potential confusion from buyers and project developers); *see also* Blaufelder et al., *supra* note 44.

92 *See* NOWAK ET AL., *supra* note 91.

93 *Id.*

and achieve significant GHG reductions.[94] When carbon registries have different carbon calculation standards, it can become more challenging to consolidate and trade substantial amounts of carbon offsets.[95] For instance, a project owner may have a sector of their forest land conserved under GS' methodology and another identical sector conserved under VCS' methodology. GS' and VCS' carbon calculation and credit issuance periods for forest conservation projects are different, which means that despite both plots of land being identical, they will produce different amounts of carbon credits over time.[96]

Differing MRV requirements for different carbon credit calculation standards are prominent throughout the VCM. For example, GS requires annual reports including GHG and sustainability aspects while VCS requires monitoring reports but no specified frequency.[97]

The cost of fragmentation with carbon calculation standards can be explained using the Coase Theorem, which states that in the absence of transaction costs, efficient outcomes can be achieved through private bargaining, regardless of the initial allocation of property rights.[98] In the context of the VCM, the fragmentation of carbon calculation standards increases transaction costs, making private bargaining more difficult and

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94 *See* Axel Michaelowa, *Fragmentation of International Climate Policy: Doom or Boon for Carbon Markets?, in* PROGRESSING TOWARDS POST-2012 CARBON MKTS. 13, 14–16 (2011).

95 *See id.*

96 MICHAELOWA ET AL., *supra* note 56, at 28–30 (stating that the Gold Standard offers a five-year renewable certification cycle while the VCS offers 10-year crediting periods, renewable up to two times for non-AFOLU projects.); FAMILY FOREST CARBON PROGRAM, VM0045 METHODOLOGY FOR IMPROVED FOREST MANAGEMENT USING DYNAMIC MATCHED BASELINES FROM NATIONAL FOREST INVENTORIES, (V1.0 2022), https://verra.org/methodologies/methodology-for-improved-forest-management; *Standard Documents*, GOLD STANDARD, https://www.goldstandard.org/project-developers/standard-documents (last visited Oct. 5, 2023).

97 GOLD STANDARD FOR THE GLOBAL GOALS, PROJECT ANNUAL REPORT FORM (2022), https://globalgoals.goldstandard.org/t-perfcert-annual-report/ (last visited Oct. 5, 2023).

98 *See* Richard A. Posner, *Nobel Laureate: Ronald Coase and Methodology*, 7 J. OF ECON. PERSPECTIVES 195, 195–96 (1993).

leading to inefficient outcomes.[99] For example, if a buyer wants to purchase carbon credits from a seller, but the buyer and seller are using different standards, the transaction costs associated with reconciling the standards can be significant. This can result in the buyer paying a higher price for the credits or the seller receiving a lower price, reducing the total value of the VCM. The Coase Theorem provides a theoretical explanation for why private bargaining may not be sufficient to overcome these transaction costs, leading to inefficient outcomes.[100] Therefore, establishing a universal standard for carbon accounting could help reduce transaction costs and increase the total value of the VCM.[101]

To address the challenges posed by market fragmentation, some carbon registries have taken steps to align their MRV standards and methodologies.[102] For example, VCS has collaborated with other standard organizations, such as the Climate, Community and Biodiversity Alliance.[103] VCS has worked with these organizations to develop a set of complementary standards, including MRV processes for new methodologies.[104] Similarly, GS has worked to harmonize its requirements with those of other standards, such as the CDM.[105] Aligning the standards and methodologies employed by other registries can aid in tackling MRV fragmentation by minimizing the diversity of carbon calculation methods. Voluntary efforts are beneficial; however, they are limited in scope and fall short of fully

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99 *See id.* at 198.
100 *Id.*
101 *See generally id.*
102 *See CCB Standards*, THE CLIMATE, CMTY. & BIODIVERSITY ALL., https://www.climate-standards.org/ccb-standards/ (last visited Oct. 5, 2023).
103 *Id.*
104 *Id.*
105 *CDM Transition*, GOLD STANDARD FOR THE GLOBAL GOALS, https://globalgoals.goldstandard.org/cdm-transition/ (last visited Oct. 4, 2023).

addressing the entire market's needs.

B. TRUST AND TRANSPARENCY

The second overarching issue in VCM is the lack of trust and transparency in the system.[106] Almost all VCM registries validate projects and calculate carbon credits through their independent MRV methodology.[107] Registries are not required to disclose their MRV methodology to market participants, which allows them to sell credits without proving their legitimacy.[108] The absence disclosure requirements in the carbon calculation process creates considerable transparency concerns for project developers and end consumers, which can ultimately delegitimize the market.[109] Revealing internal processes from the carbon registries verification process can resolve transparency concerns.[110] Full transparency requires public access to all carbon credit transactions and how each credit was created.[111]

The current infrastructure for the VCM contains significant issues regarding the overall legitimacy of the offsets themself.[112] Voluntary carbon offsetting can be a way for

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106 *See* Gary E. Marchant et al., *Bringing Technological Transparency to Tenebrous Markets: The Case for Using Blockchain to Validate Carbon Credit Trading Markets*, 62 NAT. RES. J. 159, 166–67 (2022).

107 *See* MICHAELOWA ET AL., *supra* note 56, at 28–30.

108 MICHAELOWA ET AL., *supra* note 56, at 19.

109 Junghoon Woo et al., *Applying Blockchain Technology for Building Energy Performance Measurement, Reporting, and Verification (MRV) and the Carbon Credit Market: A Review of the Literature*, 205 BLDG. & ENV'T 1, 6–10 (2021).

110 Marchant et al., *supra* note 106, at 166–67.

111 See TASKFORCE ON SCALING VOLUNTARY CARBON MKTS., PHASE II REPORT 9–13 (2021).

112 Grayson Badgley et al., *Systematic Over-Crediting in California's Forest Carbon Offsets Program*, 28 GLOB. CHANGE BIOLOGY 1433, 1435–37 (2021); *see, e.g.*, Brian A. Needelman et al., *The Science and Policy of the Verified Carbon Standard Methodology for Tidal Wetland and Seagrass Restoration*, 41 ESTUARIES & COASTS 2159, 2168–69 (2018) (analyzing VCS methodology for tidal wetland and seagrass restoration showed that additional data is needed to increase the confidence of estimates in these systems).

companies to avoid reducing their GHG emissions while touting their "sustainability."[113] Most countries do not regulate the trade of voluntary carbon credits.[114] The lack of regulation can decrease accountability, increasing the risk of fraud, misrepresentations, and mismanagement in the current market structure, all of which can have legal implications for the end consumer.[115]

Lack of standardization among the MRV approaches of credit generators may make it unclear how end-users can represent the impacts of their carbon offset purchases. Carbon offsets act as a type of currency to substantiate assertions of carbon neutrality.[116] In many jurisdictions, misrepresenting or fraudulently claiming carbon offsets for marketing purposes could be a violation of consumer protection laws.[117] Marketers who claim carbon neutral goods or services are under scrutiny for both the extent of the product life cycle covered by the carbon neutrality assertion, as well as the use of offsets to support these claims.[118]

While the Federal Trade Commission's (FTC's) Guides for the Use of Environmental Marketing Claims (Green Guides) provide guidance for companies that make environmental claims,[119] applying this guidance to carbon offsets is unclear.[120] The Green Guides offer general principles and some specific guidance on carbon offsets that

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113 Robert O. Mendelsohn et al., *A Framework to Ensure That Voluntary Carbon Markets Will Truly Help Combat Climate Change*, BROOKINGS (Sept. 16, 2022), https://www.brookings.edu/research/a-framework-to-ensure-that-voluntary-carbon-markets-will-truly-help-combat-climate-change/.

114 NOWAK ET AL., *supra* note 91, at 4.

115 MICHAELOWA ET AL., *supra* note 56, at 21–23.

116 Mendelsohn et al., *supra* note 113.

117 *See, e.g.*, 16 C.F.R. § 260.5; 15 U.S.C. § 45; Or. Rev. Stat. Ann. § 526.786.

118 16 C.F.R. § 260.5.

119 *See id.* § 260.1.

120 *See* Eduard Merger & Till Pistorius, *Effectiveness and Legitimacy of Forest Carbon Standards in the OTC Voluntary Carbon Market*, 6 CARBON BALANCE & MGMT. (2011).

inform treatment of carbon neutrality claims.[121] The Guides require that any offsets used toward carbon neutrality claims must demonstrate "competent and reliable scientific and accounting methods."[122] There is no federal standard to determine what constitutes "competent and reliable scientific and accounting methods," so implementing this standard can be a source of confusion.[123] A new federal carbon calculation and MRV standard would help bolster the legitimacy of the credits themselves.

III. ADDITIONALITY AND PERMANENCE CONCERNS

In the voluntary carbon market, demonstrating additionality and permanence is crucial to ensure that carbon credits correspond to genuine reductions in GHG emissions.[124] Projects must demonstrate continuous production over the years and that the reductions achieved would not have occurred without the influx of capital generated through the sale of carbon credits.[125] If a project results in emissions reductions that exceed the baseline scenario, it can be deemed "additional" and is eligible to generate carbon credits.[126] This approach establishes that the generated carbon credits genuinely contribute to reducing GHG emissions.[127] Permanence requires the carbon stored by a project to be maintained for a specific time frame set by the standards organization.[128]

Controlling for additionality and permanence provides assurance to buyers that

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121 16 C.F.R. § 260.1(a).
122 *Id.* § 260.5(a).
123 MICHAELOWA ET AL., *supra* note 56, at 14–16.
124 Axel Michaelowa et al., *Additionality Revisited: Guarding the Integrity of Market Mechanisms Under the Paris Agreement*, 19 CLIMATE POL'Y 1211, 1213, 1219–24 (2019).
125 *Id.* at 1211.
126 Miltenberger et al., *supra* note 61, at 3–4.
127 Todd Phillips & Alex Fredman, *The CFTC Should Raise Standards and Mitigate Fraud in the Carbon Offsets Market,* CTR. AM. PROGRESS (Oct. 7, 2022), https://www.americanprogress.org/article/the-cftc-should-raise-standards-and-mitigate-fraud-in-the-carbon-offsets-market/.
128 *Id.*

their investments result in real, additional emissions reductions and not just emissions reductions that would have transpired as part of normal business operations.[129] Whether the VCM effectively reduces emissions and mitigates climate change depends on controlling additionality.[130]

A. LACK OF ADDITIONALITY CRITERIA RESULTING IN FAULTY CARBON CREDITS

Non-additionality is a pervasive issue in carbon offset markets.[131] According to a report from the International Journal for Crime, Justice, and Social Democracy, "[t]he problem of additionality is an inherent weakness in offset projects."[132] Inquiries into the two offset programs employed under the Kyoto Protocol have both uncovered complications regarding additionality.[133] One such investigation approximated that at least half of approved offsets under the CDM were granted to projects that would have been constructed regardless.[134] Another study approximated that 85% of examined CDM-issued projects exhibited low likelihoods of being additional, while a third investigation approximated that three-quarters of offsets issued were improbable to be additional.[135] The lack of additionality control may have contributed to GHGs emissions to be about 600 million tons of CO_2 equivalent higher than if participating countries met their

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129 *See* Thomas Dietz & Janina Grabs, *Additionality and Implementation Gaps in Voluntary Sustainability Standards*, 27 NEW POL. ECON., 203–24 (2021).

130 *Id.*

131 Phillips & Fredman, *supra* note 127.

132 Peter Martin & Reece Walters, *Fraud Risk and the Visibility of Carbon*, 2 INT'L J. FOR CRIME, JUST. & SOC. DEMOCRACY 27, 35 (2013).

133 Phillips & Fredman, *supra* note 127.

134 Raphael Calel et al., *Do Carbon Offsets Offset Carbon?* 30 (CESifo, Working Paper No. 9368, 2021) https://www.cesifo.org/en/publications/2021/working-paper/do-carbon-offsets-offset-carbon.

135 MARTIN CAMES ET AL., HOW ADDITIONAL IS THE CLEAN DEVELOPMENT MECHANISM?: ANALYSIS OF THE APPLICATION OF CURRENT TOOLS AND PROPOSED ALTERNATIVES 14 (2016).

emissions domestically.[136]

The VCM also struggles with non-additionality. Investigations into the efficacy of carbon offsetting projects have surfaced, as exemplified by a recent examination of a carbon offset project owned by The Nature Conservancy.[137] According to a recent investigation by Bloomberg journalist Ben Elgin, a carbon offset project covering nearly 2,800 acres of forest land operated by The Nature Conservancy (TNC) created illegitimate carbon credits.[138] The offset project purports that almost 89% of the land is at risk of imminent timber harvesting and that without TNC's conservation efforts, around 2,000 acres of forest would have been subject to harvesting.[139] However, a closer examination revealed that the landowner had never intended to cut down trees.[140] In fact, such actions would directly contradict its mission to preserve the land.[141] The Nature Conservancy responded by stating that the project adhered to the guidelines established by the ACR.[142] Although the landowner had no intention of harvesting timber, the ACR's additionality criteria was satisfied due to the project passing ACR's "Three-Prong

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136 Anja Kollmuss et al., *Has Joint Implementation Reduced GHG Emissions? Lessons Learned for the Design of Carbon Market Mechanisms* 5 (Stockholm Env't Inst., Working Paper No. 2015-07, 2008) https://www.sei.org/publications/has-joint-implementation-reduced-ghg-emissions-lessons-learned-for-the-design-of-carbon-market-mechanisms/.

137 ANJA KOLLMUSS ET AL., *supra* note 1, at 93.

138 Ben Elgin, *These Trees Are Not What They Seem*, BLOOMBERG (Dec. 9, 2020), https://www.bloomberg.com/features/2020-nature-conservancy-carbon-offsets-trees/.

139 *Id.*; *see Where We Work,* ANEW CLIMATE, https://anewclimate.com/project-map (last visited Oct. 4, 2023).

140 *See* Elgin, *supra* note 138; *see also Hawk Mountain Walks the Walk*, HAWK MOUNTAIN SANCTUARY, https://www.hawkmountain.org/conservation-science/active-research/land-conservation (last visited Oct. 4, 2023) (stating that Hawk Mountain Sanctuary placed most of their acreage in a conservation easement with TNC and the land became a part of the TNC's Working Woodlands program, which allowed Hawk Mountain to sell carbon credits).

141 *Who We Are*, HAWK MOUNTAIN SANCTUARY, https://www.hawkmountain.org/about/who-we-are (last visited Oct. 4, 2023).

142 *Where We Work*, *supra* note 139.

Additionality Test."[143] The three prongs consist of a regulatory surplus, common practice, and implementation barriers test.[144] Similarly, a significant percentage of another large certifier's rainforest offset credits raise additionality concerns.[145]

These examples demonstrate that truly controlling additionality is an issue for carbon offsets. In both examples, the end consumer or the offset provider asserted that the project satisfied the additionality criteria of VCS or ACR. Major corporations procuring flawed credits is not the main issue, but rather the deficiency of additionality checks by carbon registries, resulting in the generation of defective credits is the pressing problem. The Hawk Mountain Sanctuary project employed ACR's common practice additionality test to assess if the project could lower GHG emissions below the levels generated by commonly used technologies or practices in the industry, sector, or region.[146] Despite the land already being conserved, due to its status as privately held land and the size of the property, the forest type for this project closely resembles that of industrial forestland ownership.[147] So, simply because the area around the project could be subject to lumber production, the project would be considered additional under ACR's additionality criteria.[148] ACR failed to account for the fact that the land was already protected by the landowner, which resulted in the creation of non-additional faulty credits.

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143 THE AMERICAN CARBON REGISTRY STANDARD 30 tbl.3 (American Carbon Registry at Winrock International, 5th ed. Feb. 2018) https://americancarbonregistry.org/carbon-accounting/standards-methodologies/american-carbon-registry-standard/acr-standard-v5-0-february-2018.pdf/view.

144 *Where We Work*, *supra* note 139.

145 Patrick Greenfield, *Revealed: More Than 90% of Rainforest Carbon Offsets by Biggest Certifier Are Worthless, Analysis Shows*, THE GUARDIAN (Jan. 18, 2023), https://www.theguardian.com/environment/2023/jan/18/revealed-forest-carbon-offsets-biggest-provider-worthless-verra-aoe.

146 *See id.*

147 *Where We Work*, *supra* note 139.

148 *Id.*

To remedy the VCM's carbon calculation shortcomings, it is imperative to enhance additionality criteria and improve project implementation and design.[149] Such action would help to ensure that carbon offset projects are geared toward achieving sustainable development and GHG emission reductions.[150] Increasing the requirements of additionality considerations for carbon credit projects would ensure that only projects that result in actual emissions reductions receive carbon credits.[151] This would incentivize the development of new and innovative projects that reduce GHG emissions, which in turn would reduce emissions and help achieve sustainability goals.[152]

The United Nation's Framework Convention on Climate Change's (UNFCCC's) standard is known as the "combined tool to identify the baseline scenario and demonstrate additionality," is the main criteria used by the CDM for project verification.[153] The criteria consists of four steps, with the first step being the identification of alternative scenarios, which involves identifying all possible alternative scenarios to the proposed CDM project activity that can serve as the baseline scenario.[154] Step two requires identifying barriers and assessing which alternatives are prevented by these barriers.[155] Step three determines which of the alternative scenarios in the short list remaining after step two is the most economically or financially attractive.[156] Finally, step four is a credibility check to demonstrate additionality which complements the barrier

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149 Phillips & Fredman, *supra* note 127.
150 Michaelowa et al., *supra* note 124, at 1211–1224.
151 *Id.* at 124.
152 *Id.*
153 UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, COMBINED TOOL TO IDENTIFY THE BASELINE SCENARIO AND DEMONSTRATE ADDITIONALITY 4–10 (v. 7 2017) https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-02-v2.2.pdf/history_view.
154 *Id.* at 7–9.
155 *Id.* at 10.
156 *Id.* at 13–15.

analysis and, where applicable, the investment analysis.[157] By ensuring that carbon credits are only verified and given to projects that lead to actual emissions reductions, the carbon offset market can help to mitigate climate change effectively.[158]

A lack of robust additionality criteria results in faulty credit production.[159] A new federal policy requiring a standardized comprehensive additionality and carbon calculation model for registries operating in the U.S. would alleviate additionality concerns. Eliminating variant calculation methods ensures that all registries stay consistent with their additionality criteria.

B. LACKING PERMANENCE CRITERIA

A carbon calculation researcher named Zeke Hausfather has observed that "the planning horizons of private companies today are fundamentally inconsistent with the timelines over which carbon removal needs to occur."[160] Thus, the VCM is unable to guarantee a carbon sequestration projects' full fruition. For credits to legitimately represent carbon removal, the undertaking must be continuous and everlasting—this is "permanence."[161] Permanence is a common consideration when assessing carbon credits' legitimacy.[162]

Forest-based offset projects, which commonly encompass tree planting or forest preservation, are particularly susceptible to disruption because carbon can be released

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157 *Id.* at 15–16.
158 *Id.* at 9.
159 Elgin, *supra* note 138.
160 *Id.*
161 Kenneth R Richards & Grant Eric Huebner, *Evaluating Protocols and Standards for Forest Carbon-Offset Programs, Part A: Additionality, Baselines and Permanence*, 3 CARBON MGMT. 393, 404 (2012).
162 *Sylvera's Approach to ARR Ratings*, SYLVERA (Aug. 4, 2022), https://www.sylvera.com/blog/arr-carbon-ratings.

back into the atmosphere if the forest is destroyed or harvested.[163] It is exceedingly difficult to ensure the perpetual preservation of a forest, given the potential for wildfires, alterations in land ownership, political instability, and other unexpected circumstances.[164] Despite these challenges, many credit generators rely on forest-based offsets procuring forty-year agreements guaranteeing forest protection, after which the forests may be harvested.[165] As CO_2 remains in the atmosphere for approximately 100 years, the preservation of a forest for a minimum of this duration is critical for a valid offset.[166] But a major ProPublica investigation in 2019 revealed numerous instances in Brazil and Cambodia, where protected forest offsets experienced significant deforestation.[167] In one instance, a region that had been 90% forested was completely depleted in less than ten years.[168]

Despite the concerns of permanence when verifying carbon credit sequestration projects, carbon registries are under no obligation to only issue credits with 100% permanence confidence.[169] This lack of consideration perpetuates concerns over potentially faulty carbon credits due to registries verifying and issuing credits expecting that the sequestration project will remain functioning or reach full fruition.[170]

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163 *See* Richards & Huebner, *supra* note 161.

164 Grayson Badgley et al., California's *Forest Carbon Offsets Buffer Pool is Severely Undercapitalized*, 5 FRONTIERS IN FORESTS & GLOB. CHANGE (2022).

165 *Id.* at 8.

166 Lisa Song, *An (Even More) Inconvenient Truth: Why Carbon Credits for Forest Preservation May be Worse Than Nothing*, PROPUBLICA (May 22, 2019), https://features.propublica.org/brazil-carbon-offsets/inconvenient-truth-carbon-credits-dont-work-deforestation-redd-acre-cambodia/.

167 *Id.*

168 *Id.*

169 Gavin Mair*, Integrity Council's Rulebook Sets Minimum Threshold Instead of High Bar for Carbon Markets*, CARBON MKT. WATCH (July 27, 2023), https://carbonmarketwatch.org/2023/07/27/integrity-councils-rulebook-sets-minimum-threshold-instead-of-high-bar-for-carbon-markets/; *see also* THE INTEGRITY COUNCIL FOR THE VOLUNTARY CARBON MARKET, CORE CARBON PRINCIPLES, ASSESSMENT FRAMEWORK AND ASSESSMENT PROCEDURE 6–8 (July 2023).

170 Mair, *supra* note 169.

C. IMPACT OF FAULTY CARBON CREDITS

Quantifying the potential damage from lack of additionality and permanence is challenging, partly because the total amount of CO_2 released into the atmosphere due to faulty carbon credits is impossible to calculate.[171] Trading fraudulent carbon credits has far-reaching ramifications for both the public and the environment.[172] Designed to counteract emissions by funding emissions reduction initiatives, these credits may be employed in a manner that weakens their efficacy as a means of mitigating climate change.[173] Furthermore, using fraudulent credits can erode public trust in carbon markets and other emissions reduction endeavors.[174]

Consumers face a difficult challenge to determine the legitimacy of carbon credits in the VCM, which reveals a "lemons problem." The lemons problem in the VCM arises when buyers are unable to differentiate between genuine high-quality carbon credits and lower-quality ones, leading to a lack of confidence in the market and a reduction in overall demand.[175] One approach to address the lemons problem is to reduce the associated information costs, which are the expenses incurred in obtaining and verifying information about the quality of carbon credits.[176] The greater the information costs, the more difficult it becomes for buyers to distinguish between high-quality and low-quality

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171 Song, *supra* note 166.

172 *See* Wayne D. Hettenbach & Lauren D. Steele, *The Past May Be Prologue: Energy Credit Fraud and Its Lessons for Carbon Credit Systems*, 69 DEP'T OF JUST. J. FED. L. & PRAC. 79 (2021).

173 *See id.*

174 *See* David Dharish et al., *Developing FinTech Ecosystems for Voluntary Carbon Markets Through Nature-Based Solutions: Opportunities and Barriers in ASEAN*, in GREEN DIGITAL FIN. AND SUSTAINABLE DEVELOPMENT GOALS 111, 136–42 (2022).

175 *See* Winand Emons, *Warranties, Moral Hazard, and the Lemons Problem*, 46 J. OF ECON. THEORY 16, 16–33 (1988).

176 Mary J. Benner & Todd Zenger, *The Lemons Problem in Markets for Strategy*, 1 STRATEGY SCI. 71, 75–76 (2016).

carbon credits, thereby increasing the likelihood of the lemons problem.[177] Enhancing transparency in carbon credit verification and certification processes and developing standardized methodologies for carbon credit generation and tracking can significantly reduce the information costs of the VCM.[178] These measures would enable buyers to obtain more reliable and consistent information about the quality of carbon credits, and thus make more informed purchasing decisions, ultimately reducing the lemons problem in the VCM.

The production and sale of fraudulent carbon credits can compromise the credibility of carbon offset markets and hinder climate change mitigation efforts.[179] The VCM relies on credible carbon credits to guarantee genuine, measurable, and verifiable emissions reductions.[180] But when fraudulent credits are sold and traded, the environmental benefits of these credits are overstated or non-existent, thereby undermining the integrity of the carbon offset market and its effectiveness in mitigating climate change.[181] Purchasing faulty credits also diverts resources from legitimate offset projects with a more substantial environmental impact.[182] Promoting legitimate carbon offset projects with rigorous standards would help prevent the negative effects of fraudulent carbon credits, also known as "Hot Air."[183]

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177 *See id.*
178 *See id.*
179 Nicole Franki, *Regulation of the Voluntary Carbon Offset Market*, 48 COLUM. J. OF ENV'T L. 177, 197–99 (2022).
180 *Id.* at 197.
181 Lisa Song & James Temple, *A Nonprofit Promised to Preserve Wildlife. Then it Made Millions Claiming it Could Cut Down Trees*, PROPUBLICA (2021), https://www.propublica.org/article/a-nonprofit-promised-to-preserve-wildlife-then-it-made-millions-claiming-it-could-cut-down-trees (last visited Oct. 7, 2023).
182 Franki, *supra* note 179, at 181, 190.
183 Phillips & Fredman, *supra* note 127.

Hot Air credits do not represent actual emission reductions and can be generated through various mechanisms like outdated baselines or emissions data manipulation.[184] When these credits are traded in the VCM, they can have a detrimental effect on the environment and carbon reduction goals.[185] By artificially inflating the carbon credit supply, Hot Air credits create a false sense of progress in reducing GHG emissions, and can make it more difficult for genuine emissions reductions projects to find buyers for their credits.[186] The production and sale of Hot Air credits ultimately undermines the environmental integrity of the carbon market and hinders progress toward meeting global carbon reduction goals.[187]

To reduce hot air credits, it is crucial to establish rigorous protocols for assessing additionality. Overall, a comprehensive approach that combines robust methodologies, strict regulations, independent verification, and greater transparency and accountability would most effectively reduce Hot Air credits.[188]

IV. SOLVING VCM SCALING ISSUES WITH POTENTIAL MARKET REGULATIONS

No federal agency has intervened to set regulations on the free trade of carbon credits.[189] Without any regulatory measures, illegitimate practices will continue, ultimately affecting end consumers and the environment.[190] Also, without regulations, participants in the VCM lack a clear and consistent standard against which to measure the registries' conduct and practices. Thus, it is imperative that federal entities step up and

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184 Katherine Watts, *Avoiding Hot Air in the 2015 Paris Agreement,* CARBON MKT. WATCH (Nov. 2015), https://carbonmarketwatch.org/wp/wp-content/uploads/2015/11/International-hot-air_final.pdf.
185 MICHAELOWA ET AL., *supra* note 56, at 28–30.
186 *Id.*
187 Watts, *supra* note 184.
188 *See id.*
189 Phillips & Fredman, *supra* note 127.
190 Franki, *supra* note 179, at 204–09.

implement regulations to ensure the legitimacy of this industry.

The absence of a uniform standard creates uncertainty regarding the potential for civil liability. In the VCM, consumers have access to legal remedies such as common law fraud claims and consumer protection laws at both state and federal levels.[191] However, the absence of standardized regulations for MRV processes poses a challenge to litigants.[192] Additionally, regulatory authority is dispersed among various federal agencies and common law rules, which can result in diluted oversight power and potential inconsistencies across different cases, courts, and jurisdictions.[193]

Establishing federal regulations on the MRV process for carbon credits would create a legally binding and cohesive norm governing individuals and firms in the market.[194] A federal agency could impose consistent and comprehensive regulations on MRV processes across all participating carbon registries. This would ensure that all market participants abide by the same set of rules—promoting transparency and reducing confusion.[195] Additionally, a federal agency's oversight can prevent fraudulent activities and misrepresentations in the market, safeguarding the credibility of carbon credits.[196] If the VCM were subject to federal regulation, investors would be encouraged to participate in the market because the VCM would be a more stable and predictable market

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191 Salter, *supra* note 59, at 66.

192 Perrin Cooke, *Green Guide Gaps: Expanding FTC Authority Over Low-Carbon Marketing Claims,* 39 COLUM. J. ENV'T L. 105, 139 (2014).

193 *See* Salter, *supra* note 59, at 62 ("[T]here is no regulation or government oversight to directly deter fraud or misrepresentation in the carbon offset market.").

194 *See* Barak Orbach, *What is Regulation?*, 30 YALE J. REGUL. ONLINE 1, 6 (2012).

195 Maurice Kenny, *What Role Does the CFTC Play: 4 Main Functions*, MAURICEKENNYTRADING (Aug. 7, 2022), https://mauricekennytrading.com/what-role-does-the-cftc-play-4-main-functions/.

196 *See* Jacqueline M. Drew & Michael E. Drew, *Establishing Additionality: Fraud Vulnerabilities in the Clean Development Mechanism,* 23 ACCOUNTING RSCH. J. 243, 243–53 (2010).

environment.[197]

Also, a universal carbon calculation standard could overcome market fragmentation.[198] For example, the European Union Emissions Trading System (EU-ETS) uses the CDM and Joint Implementation (JI) as the universal carbon offset creation standard.[199] A carbon sequestration project that does not meet the criteria for either JI or CDM will not be considered for credit issuance under the EU-ETS.[200] The universal implementation of the CDM's carbon calculation standard significantly decreases the EU-ETS fragmentation and additionality issues.[201] As seen in the case of CDM, the fragmentation and additionality concerns in the VCM could be addressed by standardizing a carbon calculation process that all participants must follow.[202]

A. COMMODITIES FUTURES TRADING COMMISSION

The Commodities Futures Trading Commission (CFTC) is the most appropriate agency to take on the task of implementing a standardized MRV and carbon calculation methodology. The CFTC "protects the public from fraud, manipulation, and abusive practices related to the sale of commodity and financial futures and options."[203] The CFTC derives its regulatory jurisdiction from the Commodity Exchange Act (CEA), which gives

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197 *Financing to Promote Participation in Voluntary Carbon Markets*, UNITED NATIONS, https://unfccc.int/climate-action/momentum-for-change/activity-database/momentum-for-change-financing-to-promote-participation-in-voluntary-carbon-markets (last visited Oct. 7, 2023).

198 *See Joint Implementation*, UNITED NATIONS: CLIMATE CHANGE, https://unfccc.int/process/the-kyoto-protocol/mechanisms/joint-implementation (last visited Oct. 7, 2023) (implying that the implementation of JI and CDM prevents EU-ETS market fragmentation and ensures additionality criteria appropriately).

199 *Id.*

200 *Id.*

201 *See Joint Implementation, supra* note 198.

202 *VCS Program Details: Rules & Requirements*, VERRA, https://verra.org/project/vcs-program/rules-and-requirements/ (last visited Oct. 7, 2023).

203 *U.S. Commodity Futures Trading Commission (CFTC)*, USAGOV, https://www.usa.gov/agencies/u-s-commodity-futures-trading-commission (last visited Oct. 6, 2023).

the CFTC the authority to govern select aspects of commodity markets.[204] The CEA empowers the CFTC to undertake measures, such as levying fines, to forestall fraudulent practices, manipulation, and other improprieties in futures and options markets.[205] Furthermore, Section 6(c) of the CEA allows the CFTC to protect consumers and other market participants by giving the CFTC broad authority to investigate and prosecute fraud and manipulation.[206] The regulatory expertise of the CFTC and its commitment to safeguarding consumers renders it an optimal choice for overseeing the VCM.[207]

The CEA defines a commodity as "interests in which contracts for future delivery are presently or in the future dealt in."[208] This broad definition encompasses a wide range of goods and products, including agricultural products, energy resources, metals, and financial instruments such as futures contracts and options.[209] Additionally, Section 9 of the CEA makes it unlawful "to use or employ any commodity in interstate commerce in connection with a manipulative or deceptive device," thus giving the CFTC authority to prevent deceptive practices with the trade of interstate commodities.[210]

Case law and agency guidance can further guide the legal interpretation of interstate commerce with commodities. For example, in one case, the Supreme Court stated, "[g]as, when reduced to possession, is a commodity; it belongs to the owner of the land; and, when reduced to possession, is his individual property, subject to sale by him, and may be a

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204 Commodity Exchange Act, 7 U.S.C. § 2a(1) (2022).
205 *Id.* § 6b-1.
206 *Id.* § 6c.
207 *See* Robert M. Brown, *CFTC Overhauls Customer Protection Requirements*, 15 J. OF INV. COMPLIANCE 25, 25–32 (2014).
208 7 U.S.C. § 1a(9).
209 *Id.*
210 *Id.* §§ 9(1), 9(4)(a).

subject of intrastate commerce and interstate commerce."[211] By stating that natural gas is a commodity, the court implies that a commodity is a good or article that can be bought and sold in commerce, which is consistent with the CEA's broad definition of a commodity as any "good, article, service, right, or interest in which contracts for future delivery are presently or in the future dealt in."[212]

The CFTC has a well-established history of overseeing financial markets and enforcing rules and regulations to maintain their stability and integrity.[213] An example of this oversight and enforcement is the CFTC's role in developing and implementing new regulations under the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 after the 2008 financial crash.[214] These regulations included increased oversight for over the counter derivatives, such as credit default swaps, and the establishment of new trading requirements, transparency measures.[215] Additionally, the CFTC had limited authority over the Chicago Climate Exchange, a former voluntary carbon credit exchange.[216] This suggests that the CFTC has experience with the unique challenges associated with carbon offsets and may be well-suited to adapt to new regulations in the future. Overall, the CFTC's track record of overseeing financial markets and enforcing regulations inspires confidence in its ability to navigate the complex landscape of carbon

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211 West v. Kan. Natural Gas Co., 221 U.S. 229, 255 (1911).

212 *See id.*; 7 U.S.C. § 1a(9).

213 *See CFTC Mission Statement*, COMMODITY FUTURES TRADING COMM'N, https://www.cftc.gov/About/AboutTheCommission#:~:text=The%20mission%20of%20the%20Commodity,derivatives%20markets%20through%20sound%20regulation (last visited Sep. 19, 2023) ("The mission of the Commodity Futures Trading Commission is to promote the integrity, resilience, and vibrancy of the U.S. derivatives markets through sound regulation.").

214 *See* Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111–203, 124 Stat. 1376 (2010).

215 *See id.* at 1641–58.

216 U.S. GOV'T ACCOUNTABILITY OFFICE, GAO–08–1048, *Carbon Offsets: The U.S. Voluntary Market Is Growing, but Quality Assurance Poses Challenges for Market Participants* (2008).

markets.

The CFTC has already expressed an interest in possessing oversight of existing carbon markets.[217] The Interagency Working Group for the Study on Oversight Carbon Market is led by the CFTC and has released a report on the oversight of existing and prospective carbon markets.[218] This report found that market participants often engage in environmental commodity transactions so the buyer can consume the commodity and be in compliance with a mandatory or voluntary program.[219] The two features that differentiate environmental commodity transactions from other non-deliverable intangible commodity transactions, such as temperatures and interest rates, are ownership transfer and consumption.[220] As a result, the CFTC determined that "environmental commodities" are nonfinancial commodities that can be delivered through electronic settlement or contractual attestation.[221] This means that carbon credits are not physically "consumed," but rather traded in secondary market fashion like a stock or bond, which meets the CFTC's definition of "swap" under the CEA and gives the CFTC the authority to regulate the trade of environmental commodities such as renewable energy credits (RECs).[222] Carbon credits, like RECs, are environmental commodities that incentivize environmentally friendly practices and are traded in environmental markets. The CEA's broad definition of

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217 *See* INTERAGENCY WORKING GROUP FOR THE STUDY ON OVERSIGHT OF CARBON MARKETS, REPORT ON THE OVERSIGHT OF EXISTING AND PROSPECTIVE CARBON MARKETS (Jan. 2011) [hereinafter Carbon Report], https://www.cftc.gov/sites/default/files/idc/groups/public/@swaps/documents/file/dfstudy_carbon_011811.pdf.

218 *Id.*

219 *Id.*

220 Further Definition of "Swap," "Security-Based Swap," and "Security-Based Swap Agreement"' Mixed Swaps; Security-Based Swap Agreement Recordkeeping, 77 Fed. Reg. 48,208, 48,234 (Aug. 13, 2012) (to be codified at 17 C.F.R. pts. 230, 240, 241).

221 *Id.*

222 *Id.*

commodity suggests that carbon offsets could fall within its regulatory purview.[223]

In terms of agency guidance, the CFTC has issued interpretive letters and guidance documents clarifying the definition of commodities and the scope of its regulatory authority.[224] In a 2015 interpretive letter, the CFTC relied on an administrative proceeding that classified virtual currencies as "goods" traded in a market for a uniform quality and value, thereby satisfying the definition of a "commodity" under both the CEA and common usage. [225] The CFTC has jurisdiction over commodities and any contracts, agreements, or transactions that it treats as a commodity in interstate commerce.[226] As defined in the CEA, interstate commerce encompasses commerce between any location within a state, territory, or possession and a location outside of it, as well as commerce between two locations within the same state, territory, or possession that passes through a location outside of it.[227] Because carbon credits are considered an environmental commodity and are traded in markets across state borders, they meet the definition of a transaction in interstate commerce, and therefore fall within the jurisdiction of the CFTC.[228] As a result, carbon offset markets, such as the VCM, probably are subject to the CFTC's regulatory authority.

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223 *See* 7 U.S.C. § 1a(9).

224 *See, e.g.*, Press Release, Commodity Futures Trading Commission, CFTC to Hold Open Meeting on Five Final Rule Proposals under the Dodd-Frank Act (Jun. 30, 2011), https://www.cftc.gov/PressRoom/PressReleases/6064-11.

225 Press Release, Commodity Futures Trading Commission, CFTC Orders Bitcoin Options Trading Platform Operator and its CEO to Cease Illegally Offering Bitcoin Options and to Cease Operating a Facility for Trading or Processing of Swaps without Registering (Sept. 16, 2015), https://www.cftc.gov/PressRoom/PressReleases/7231-15.

226 7 U.S.C. § 1a.

227 *Id.*

228 Further Definition of "Swap," "Security-Based Swap," and "Security-Based Swap Agreement"; Mixed Swaps; Security-Based Swap Agreement Recordkeeping, 77 Fed. Reg. at 48285 n.291 (explaining that, "unlike a stock or a bond, which can be resold for its cash value, purchasers of environmental commodities intend to take delivery of RECs or carbon offsets for either compliance purposes or in order to make an environmental claim regarding their renewable energy use or carbon footprint"); *see generally*, *id.* at 48,233–35.

The CFTC provides that an intangible commodity that can be physically delivered qualifies as a nonfinancial commodity if ownership of the commodity can be conveyed in some manner and the commodity can be consumed.[229] One example that qualifies under this interpretation is an "environmental commodity, such as an emission allowance, that can be physically delivered and consumed (e.g., by emitting the amount of pollutant specified in the allowance)."[230] Because a voluntary carbon credit can be delivered and "consumed," it would meet the description of an environmental commodity.[231]

Given that voluntary carbon credits are a commodity and can be traded in the same manner as other commodities, they fall within the purview of the CFTC's regulatory authority. By regulating the VCM, the CFTC would ensure that these credits are traded fairly and transparently and that market participants comply with regulations designed to prevent manipulation and fraud. In conclusion, the CFTC's regulatory experience, expertise in preventing market manipulation and fraud, the obligation to protect consumers, and enforcement powers make it a suitable entity to regulate the VCM.

B. THE SECURITIES AND EXCHANGE COMMISSION (SEC)

Although the SEC could govern issuance of securities in carbon reduction projects and regulates climate based risk disclosures by public companies, it does not have regulatory authority over credit generators in the VCM.[232] Under the Securities Exchange Act (SEA), the SEC has authority to regulate the offer and sale of securities in the U.S.[233] This broad grant of authority enables the SEC to regulate various forms of

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229 *See id.* at 48,233.
230 *Id.*
231 *Id.* at 48,233.
232 Securities Exchange Act, 15 U.S.C. §§ 78a–78kk.
233 *Id.*

financial instruments, including those that may be considered securities in a secondary market.[234] One possible argument for the SEC's jurisdiction over the VCM is that carbon credits may be considered securities under the SEA. Carbon credits represent a reduction in GHGs released into the atmosphere, and credits can be traded in a secondary market similar to stocks.[235] However, carbon credits likely do not meet the definition of a security as defined by the Howey test.[236]

The Supreme Court defines a security as a financial instrument that involves an investment of money in a common enterprise with the expectation of profits derived from the efforts of others.[237] In the landmark case *SEC v. W.J. Howey Co.*, the Supreme Court established the Howey test to determine whether a financial instrument qualifies as a security.[238] If an investment is deemed to be a security, then it is subject to regulation by the SEC and other federal securities laws, including registration requirements and disclosure rules.[239]

The Howey test has four prongs, and if an investment meets all the criteria, it is considered a security and is subject to the registration and disclosure requirements of the federal securities laws.[240] The four prongs of the test are 1) an investment of money, 2) in a common enterprise, 3) with an expectation of profits, that is 4) solely from the efforts of others.[241] In *SEC v. Ripple Labs Inc.*, Ripple argued that their cryptocurrency was not a

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234 *See id.*
235 *See Carbon Offset vs Carbon Credit: What's the Difference?*, HEDERA, https://hedera.com/learning/esg/carbon-offset-vs-carbon-credit (last visited Sep. 13, 2023).
236 *See* SEC v. W.J. Howey Co., 328 U.S. 293, 298–99 (1946) (defining the test for a security).
237 *Id.* at 301.
238 *Id*. at 298–99.
239 *See* 15 U.S.C. §§ 78a–78kk.
240 *W.J. Howey Co*., 328 U.S. at 298, 301.
241 *Id.* at 301.

security because it is a currency, not an investment contract.[242] The SEC argued that all four prongs of the Howey test were met because 1) purchasers were investing in a common enterprise, 2) money pooling for the operations occurred, 3) the defendant expected profits, and 4) Ripple's founders and executives played a significant role in the cryptocurrency's success.[243] Though *SEC v. Ripple Labs Inc.* is still ongoing, it provides an excellent example of how the Howey test is applied to emerging financial markets such as cryptocurrency.

To determine whether carbon credits meet the definition of a security, the SEC must apply the Howey test.[244] Case law has expanded the first prong, an investment of money, to include any form of consideration with value.[245] When the end buyer wants to buy a carbon credit from a project owner, the buyer gives the project owner any form of consideration with value in exchange for the credit.[246] This type of transaction would meet the first prong of the Howey test.

The second element requires a common enterprise.[247] In most federal courts, a common enterprise is typically defined as having "horizontal commonality."[248] This means that multiple investors contribute their money or assets to a common enterprise,

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242 Sec. Exchange Comm'n v. Ripple Labs, Inc., 2022 U.S. Dist. LEXIS 43497, at *9 (S.D.N.Y. Mar. 11, 2022).

243 *Id.* at 26.

244 *See W.J. Howey Co*., 328 U.S. at 301.

245 Marc G. Alcser, *The Howey Test: A Common Ground for the Common Enterprise Theory*, 29 U.C. DAVIS L. REV. 1217 (1996); *see* Int'l Bhd. of Teamsters v. Daniel, 439 U.S. 551, 560 n.12 (1979) (noting that goods and services satisfy investment of money requirement as well as cash); *see also* Hector v. Wiens, 533 F.2d 429, 432–33 (9th Cir. 1976) (finding that a promissory note satisfies money requirement); *see also* Sandusky Land, Ltd. v. Uniplan Groups, Inc., 400 F. Supp. 440, 445 (N.D. Ohio 1975) (noting that services satisfy money requirement).

246 *See* Alcser, *supra* note 245, at 1217.

247 *W.J. Howey Co*., 328 U.S. at 301.

248 Revak v. SEC Realty Corp., 18 F.3d 81, 87 (2d Cir. 1994).

and in return, they proportionally share both the profits and risks involved.[249] In the case of voluntary carbon credits, companies and individuals can purchase credits to offset their carbon footprint.[250] Typically, these credits are sold by companies or entities that have reduced their own carbon footprint or have invested in renewable energy projects.[251] Although a monetary transaction takes place, the buyer of a carbon credit is not investing in the activities of the credit generator. Rather, they are purchasing the credit for their own use. Therefore, the purchase of carbon credits does not involve a common enterprise and would fail the second prong of the Howey test.

Even if a purchase of a carbon credit was found to create a common enterprise, carbon credits still fail the third and fourth prongs of the Howey test. The third element of the Howey test requires that the investor expects to make a profit from their investment.[252] In the case of voluntary carbon credits, the expectation of profit may not be present for all investors.[253] Some investors may purchase carbon credits for ethical or environmental reasons, without the expectation of a financial return.[254] However, for investors who purchase carbon credits as part of a carbon offset program, the expectation of reducing their carbon footprint may be a motivating factor. Therefore, this element is not certain, causing the third prong to fail.

The fourth element of the Howey test requires that the investor's fortunes are tied to the efforts of others.[255] In the case of voluntary carbon credits, the investor's fortunes

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249 *Id.*
250 NOWAK ET AL., *supra* note 91, at 5.
251 *Id.*
252 *W.J. Howey Co.*, 328 U.S. at 299.
253 *See generally* HARRIS, *supra* note 46.
254 *Id.*
255 *W.J. Howey Co.*, 328 U.S. at 299.

are not necessarily tied to the success of the carbon reduction or renewable energy projects that generate the credits. Certainly, the validity of the credit is tied to the success of carbon reduction, but that does not necessarily influence the investor's fortune. Investing in a carbon removal project with the intention of selling carbon credits would be considered an investment with an expectation of return, and the investor would be reliant on the efforts of others. Undoubtedly, the investor's ownership stake in the carbon project in this case would constitute a security. The issue at hand is not the transaction itself, but rather whether the sale of the resulting offsets qualifies as a security. Given this information, it is unlikely that the element is present, causing the fourth prong not to be met.

As credits are not considered a security, it is not plausible that the SEC could be the appropriate federal agency to regulate the calculation and verification of carbon credits in the VCM, and it likely lacks the necessary expertise to do so. The SEC's regulatory expertise primarily focuses on securities markets and does not include the complex aspects of commodities trading, including the unique features of carbon credits, such as additionality and permanence.[256] The SEC's ability to regulate securities is limited to only one aspect of the VCM, specifically securities created by investing in carbon credit generation projects with the aim of making profits.[257] Even though the SEC may not be the appropriate federal agency to regulate the verification and calculation of credits, they could still regulate securities created by investments in carbon credit generator projects and establish climate disclosure rules for public companies.

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[256] *See* ELYSE ET AL., *supra* note 84.
[257] *See W.J. Howey Co.*, 328 U.S. at 294–302.

C. THE ENVIRONMENTAL PROTECTION AGENCY

Despite the EPA's general authority over air pollutants the EPA does not have authority to regulate carbon offsets.[258] First, the VCM revolves around the creation and trade of carbon credits, which are intended to represent a reduction in carbon emissions. Second, the EPA's authority under the Clean Air Act strictly pertains to air pollutant reduction, rather than the transactions associated with that reduction.[259]

For the EPA to have authority over the VCM, Congress must have delegated the authority to the agency under a federal statute, in this instance the most likely delegation would be in the Clean Air Act (CAA).[260] The issue is whether the EPA has jurisdiction under the CAA to regulate carbon credits in the VCM.

While carbon credits may be designed to promote removing carbon dioxide from the atmosphere, regulating these credits probably does not fall within the scope of the CAA. The CAA gives the EPA the authority to regulate air emissions, establish air quality standards, and set emissions limits for specific pollutants.[261] The CAA covers pollutants that may endanger public health or welfare and are emitted into the ambient air.[262] The regulation of carbon credit exchanges, however, is not explicitly mentioned in the CAA.[263] The sale of carbon credits in the VCM does not involve the emission of pollutants into the ambient air and is thus not covered by the CAA.[264] Additionally, the CAA is concerned with regulating air pollutants that can harm public health or welfare,

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258 *See* Massachusetts v. Env't Prot. Agency, 549 U.S. 497 (2007).
259 *See* Clean Air Act, 42 U.S.C. §§ 7401–7671q.
260 *Id.*
261 *Id.*
262 *Id.* § 7401(b).
263 *See generally id.* §§ 7401–7671q.
264 *See Summary of the Clean Air Act*, ENV'T PROT. AGENCY, https://www.epa.gov/laws-regulations/summary-clean-air-act (last updated Sept. 6, 2023).

and the regulation of carbon credits in the VCM does not readily fit within this scope.[265] Carbon sequestration projects are focused on removing CO_2 from the air—no project would emit additional CO_2 into the air. The EPA would not have jurisdiction over carbon credit sales, and the CFTC would not be overstepping the EPA's authority if it regulated carbon markets.

Furthermore, EPA's expertise and experience in environmental regulation may not extend to the intricacies of the commodities market, including the trading of carbon credits. The VCM requires specialized knowledge of market-based mechanisms, financial instruments, and commodities trading, which is not within the EPA's core competencies.[266] The CFTC is better suited to this task. The CFTC's primary objective is to safeguard market users and the general public against fraud, manipulation, and abusive practices in relation to the sale of commodities, giving it the necessary expertise to establish and regulate commodities markets like the VCM.[267]

D. CFTC REGULATION

Given the CFTC's regulatory authority over environmental commodities and the inclusion of voluntary carbon credits within its purview, the Commission is the most suitable federal agency to undertake the regulation of the VCM.[268] The CFTC should

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265 *Id.*

266 *See* Spilker & Nugent, *supra* note 48.

267 *Summary of CFTC Mission Statement, Strategic Goals & Outcomes,* COMMODITY FUTURES TRADING COMM'N, https://www.cftc.gov/sites/default/files/reports/presbudget/2012/2012presidentsbudget0405.html#:~:text=The%20mission%20of%20the%20 CFTC,futures%2C%20options%20and%20swaps%20markets (last visited Oct. 6, 2023).

268 *The CFTC's Second Voluntary Carbon Markets Convening Provides Insight Into the CFTC's Views on Its Regulatory and Enforcement Role in the Carbon Markets*, CLEARY GOTTLIEB (July 19, 2023), https://www.clearygottlieb.com/news-and-insights/publication-listing/the-cftcs-second-voluntary-carbon-markets-convening.

draft guidance that explicitly defines methods for measuring quality and identifies activities that may constitute fraud or manipulation.[269] Guidance may provide a clear definition of actual permanence for forest-based offsets, which are inherently vulnerable to logging or fires.[270] Additionally, such guidance may outline rigorous procedures for determining additionality, possibly with a rebuttable presumption that certain forms of avoided-emissions initiatives lack additivity.[271] The CFTC could require projects to use robust and widely accepted accounting methodologies to quantify their emissions reductions, such as the Greenhouse Gas Protocol or other internationally recognized standards.[272] To minimize fragmentation between Europe and the U.S., MRV requirements should be aligned with those of the CDM. Finally, guidelines would permit the agency to retract and invalidate fraudulent carbon credits.

The CFTC having regulatory authority over the creation and verification of carbon credits would solve additionality and permanence issues by requiring carbon projects and registries to follow a standardized carbon calculation method. The method could mirror CarbonFix's standard, which finds that project emissions reductions are additional through the use of a baseline scenario representing business-as-usual emissions.[273] The UNFCCC's additionality standard utilized in the CDM could be another strong methodology to combat nonadditional concerns in the VCM.

Permanence issues are reduced by requiring projects to provide some form of

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269 *See* Blaufelder et al., *supra* note 44.
270 Phillips & Fredman, *supra* note 127.
271 *Id.*
272 Jessica F. Green, *Private Standards in the Climate Regime: The Greenhouse Gas Protocol*, 12 BUS. & POL., 2010, at 1, 4.
273 Richards & Huebner, *supra* note 161, at 399.

surety against loss and demonstrate viability over a specified period of time.[274] Surety could take the form of insurance from a third party that reserves a portion of the credits in a pool within the program.[275] The best strategy to guarantee permanence, however, would be to implement a "pay as you go" model where credits would only be issued once the sequestered carbon is validated and reported. Proper regulation would make the entire creation and transaction process transparent, allowing for stakeholders to easily access and understand the calculations behind the carbon credits. Once the new policy passes the Office of Information and Regulatory Affairs (OIRA) review, the CFTC would enforce its implementation of the policies on carbon registries involved in the VCM.[276]

All VCM participants would be subject to CFTC regulatory oversight, with carbon registries being most affected as they would need to revise their methodologies to comply with the new CFTC standard. The four most commonly used registries in the VCM with a significant amount of market influence are the VCS, ACR, CAR, and GS.[277] These registries determine the scientific criteria for verifying an offset project and keep a record of credits on them throughout their lifespan.[278] Given this, these standards are crucial in carbon-offset futures markets, serving as delivery points where credit ownership is exchanged during futures contract settlements. As such, direct oversight by the CFTC is a possibility for these entities.[279] The CFTC can mandate that these entities employ practices to prevent manipulation, price distortion, and disruptions of the delivery

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274 *Id.* at 404.
275 *Id.*
276 *See* Nicholas Bagley, *The Procedure Fetish*, 118 MICH. L. REV. 345, 355 (2019).
277 *See* So et al., *supra* note 73.
278 *See* Spilker & Nugent, *supra* note 48, at 111.
279 INT'L SWAPS & DERIVATIVES ASS'N, VOLUNTARY CARBON MARKETS: ANALYSIS OF REGULATORY OVERSIGHT IN THE US 12 (2022).

or cash-settlement process via market surveillance, compliance, and enforcement measures.[280]

CFTC supervision over these presently unregulated registries would be an essential step in maintaining the credibility of offset-based derivatives.[281] Without proper oversight of the entities keeping track of the derivatives' underlying offsets, investors cannot be certain that the derivatives genuinely represent the future delivery of offsets that embody avoided or removed carbon emissions. This is especially significant given Verra VCS' CEO's admission that an "unknown number of offsets may not be additional."[282] As such, CFTC oversight may be necessary to guarantee that the futures contracts are not manipulated, and the underlying offsets comply with eligibility standards like additionality and permanence.[283]

1. SELF-REGULATORY ORGANIZATIONS (SROS)

The proposed CFTC actions would greatly benefit the scalability of the VCM. But the CFTC might struggle with the speed of implementation and enforcement of the new regulations without assistance due to limited funding and processing time for task delegation. A potential solution for the CFTC's governance implementation issues would be self-regulatory organizations (SROs).[284] SROs are entities that are empowered to create and enforce industry standards and regulations.[285] Essentially, the SEA granted the SEC authority to establish SROs in order to help regulate and enforce specific markets.[286]

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280 17 C.F.R. § 38.250 (2021). Core Principle 4.
281 Phillips & Fredman, *supra* note 127.
282 *Id.*
283 *Id.*
284 17 C.F.R. § 1.52 (2019).
285 *Id.*
286 Jennifer M. Pacella, *If the Shoe of the SEC Doesn't Fit: Self-Regulatory Organizations and Absolute Immunity*, WAYNE L. REV. 201, 202 (2012).

For example, the New York Stock Exchange (NYSE), an SRO under the SEC, is responsible for monitoring activities on the NYSE's equities, options and bonds markets.[287] SROs are able to set rules and guidelines for their members to follow and monitor compliance with market participants.[288] While SROs can be privately owned, they are still subject to government oversight and must adhere to broader policies set by the government or government agencies.[289]

CFTC's authority to create SROs stems from the Commodity Futures Trading Commission Act, which established the CFTC as an independent federal regulatory agency with oversight over that majority of the U.S. derivatives market.[290] Part of the motivation to create the CFTC was the perceived need to provide federal oversight over the self-regulation performed by the existing derivatives exchanges.[291] Effective SROs can provide guidance and enforcement mechanisms to ensure that their members are following industry best practices and meeting legal requirements. Examples of SROs include financial regulatory bodies like the Financial Industry Regulatory Authority and the National Futures Association.[292] These organizations work to ensure that financial firms adhere to regulations and standards designed to protect investors and maintain the integrity of the markets. By operating within a self-regulatory framework, these

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287 Adam Hayes, *Self-Regulatory Organization (SRO): Definition and Examples*, INVESTOPEDIA (June 30, 2021), https://www.investopedia.com/terms/s/sro.asp.

288 Derek Fischer, Note, *Dodd-Frank's Failure to Address CFTC Oversight of Self-Regulatory Organization Rulemaking*, 115 COLUM. L. REV. 69, 73 (2015).

289 *See* 15 U.S.C. § 78a (giving SEC the authority to implement SROs that report to the SEC).

290 *See* 119 Cong. Rec. SI8963-18966 at SI8964, SI8965 (daily ed. Oct. 10, 1973) (discussing the role of the Commodity Exchange Authority in regulating the futures markets).

291 *Commodity Futures Trading Commission: History of the CFTC*, J. OF REGULATION & COMPLIANCE, https://thejournalofregulation.com/en/article/us-commodity-futures-trading-commission-cftc/ (last visited Oct. 6, 2023).

292 Emily Hammond, *Double Deference in Administrative Law*, 116 COLUM. L. REV. 1705, 1734–41 (2016).

organizations can create more streamlined and effective regulation, while also maintaining the flexibility to respond to changing market conditions.[293]

SROs are typically industry-led organizations that have a deep understanding of the market they regulate and the challenges faced by their participants.[294] The CFTC has used SROs like the National Futures Association, which was created to regulate the U.S. futures industry and protect investors in the futures and swaps markets.[295] By partnering with SROs, the CFTC can leverage its expertise and experience to effectively regulate the market and ensure that participants comply with regulations designed to prevent manipulation and fraud.[296] The CFTC partnering with an SRO to regulate the VCM would more effectively regulate the market because the SRO would have expertise in the VCM. This would promote stability and security.

Another advantage of using SROs is that they have the necessary expertise and experience in the carbon market to effectively regulate it.[297] Additionally, SROs have a proven track record of effectively regulating other financial markets, such as the securities and futures markets.[298] The CFTC's use of SROs to regulate these markets has been successful in promoting stability and transparency, protecting market participants, and fostering competition.[299]

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293 *Id.* at 1713.
294 *See generally id.*
295 *About NFA*, NATIONAL FUTURES ASS'N, https://www.nfa.futures.org/about/index.HTML (last visited Oct. 6, 2023).
296 Heath P. Tarbert, *Self-Regulation in the Derivatives Markets: Stability Through Collaboration*, 41 NW. J. INT'L L. & BUS. 175, 194 (2021).
297 *See* Lawrence J. Trautman, *Who Qualifies as an Audit Committee Financial Expert Under SEC Regulations and NYSE Rules?*, 11 DEPAUL BUS. & COMM. L. J. 205, 224–26 (2013).
298 Edward Stringham, *The Unseen Beauty That Underpins Markets*, *IN* PRIV. GOVERNANCE: CREATING ORD. IN ECON. AND SOC. LIFE (2015).
299 Tarbert, *supra* note 296, at 193.

The CFTC can also leverage its existing infrastructure and resources to effectively regulate the market using SROs.[300] In establishing SROs through rule making, the CFTC can assure regulatory oversight to prevent against abuses by SROs while still benefitting from SROs' efficiency. [301] The CFTC's expertise in using SROs to regulate other financial markets, combined with the expertise of SROs in the carbon market, makes this approach a viable option to regulate the VCM.[302]

2. INTERAGENCY COLLABORATIVE EFFORT GOVERNANCE

To properly scale the VCM, the CFTC would work alongside other agencies to implement a new federal policy that applies exclusively to the CFTC. The new policy would create a uniform carbon calculation standard while using SROs to regulate the creation and verification of carbon credits. By implementing regulatory standards in the market and enforcing them on participants, SROs could help ensure effective regulation of the VCM. This collaborative approach has the potential to address several of the key challenges currently facing the VCM.

For the CFTC to properly facilitate the trading and legitimacy of transactions in the marketplace, it would need assistance from EPA and the SEC. EPA's expertise would be necessary to establish a carbon calculation and measurement standard for carbon sequestration projects' compliance.[303] The SEC would be able to provide financial market regulatory guidance and could pass on knowledge related to creating policies and standards for trading carbon credits on the VCM.[304] Intergovernmental collaboration

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300 *Id.* at 200.
301 *Id.* at 193.
302 *See id.* at 184.
303 *Id.* at 195; *see generally supra* I.C.
304 *See Mission*, SEC. EXCH. COMM'N, https://www.sec.gov/about/mission (last updated Dec. 29, 2023).

regarding new policy creation is common in administrative law, in fact, federal agencies have used a wide array of mechanisms to help implement interagency collaborative efforts.[305] For example, the National Climate Task Force, an interagency task force, is co-chaired by the White House National Climate Advisor representatives from over twenty federal agencies.[306]

Combining different agencies' expertise could result in a robust and effective regulatory framework for the VCM. A collaboration between the CFTC, SEC, EPA, and SROs could involve the CFTC working with SROs to establish a set of regulatory standards for the carbon market, while the SEC and EPA provide guidance on proper monitoring and oversight to ensure that these standards are met. In this scenario, the CFTC would be responsible for enforcing the standards and working with the SEC and EPA to identify any potential issues, while the SEC and EPA would aid with regulation and policy creation. By leveraging the expertise of the CFTC, SEC, EPA, and SROs, this model has the potential to effectively address the key challenges facing the market and provide a platform for sustained growth and success.

The CFTC asserting regulatory jurisdiction over the VCM would align with the Biden administration's priorities and meet the requirements of the OIRA review process.[307] The OIRA evaluates the potential impacts of proposed regulations on the

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[305] U.S. GOV'T ACCOUNTABILITY OFF., GAO-12-1022, KEY CONSIDERATIONS FOR IMPLEMENTING INTERAGENCY COLLABORATIVE MECHANISMS 4–5 (2012).

[306] *National Climate Task Force*, THE WHITE HOUSE, https://www.whitehouse.gov/climate/ (last visited Oct. 6, 2023); Exec. Order No. 14008, 86 Fed. Reg. 7,619 (Jan. 27, 2021) (noting that the taskforce oversaw the United States' return to the Paris Agreement and helped develop Executive Order 14008).

[307] *See Fact Sheet: President Biden to Catalyze Global Climate Action Through the Major Economics Forum on Energy and Climate*, THE WHITE HOUSE (Apr. 20, 2023), https://www.whitehouse.gov/briefing-room/statements-releases/2023/04/20/fact-sheet-president-biden-to-catalyze-global-climate-action-through-the-major-economies-forum-on-energy-and-climate/; Bagley, *supra* note 276, at 355.

economy, environment, and public health and safety, as well as their alignment with the president's priorities and policies.[308] Due to the proposed regulatory scheme's significant impact on the environment, jobs, and the economy (with an estimated annual impact of $200 million or more), the new scheme would be classified as a "significant regulatory action" under President Biden's April 2023 executive order. [309] As a result, OIRA would evaluate the policy to determine its alignment with the administration's priorities and policies. The proposed policy would survive the OIRA's review because it aligns with EO 14008 (Tackling the Climate Crisis at Home and Abroad).[310] EO 14008 outlines a plan to address climate change and reduce GHG emissions in the U.S.[311] A proposed policy regulating the calculation and verification of carbon offsets would align with the order because it specifically calls for the development of a comprehensive plan to achieve net-zero emissions by 2050.[312]

Once the new regulations are created, the CFTC would establish various SROs to regulate the market in credit creation, verification, issuance, and trading. The newly established SROs will then enforce the specific guidelines created by the CFTC, SEC, and EPA. This will ensure that all carbon sequestration projects and the carbon credits they create are legitimate and the carbon credits trade is transparent to the public.

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308 *See* Cass R. Sunstein, Commentary, *The Office of Information and Regulatory Affairs: Myths and Realities*, 126 HARV. L. REV. 1838, 1845–46 (2013).

309 *Executive Order on Modernizing Regulatory Review*, THE WHITE HOUSE (Apr. 6, 2023), https://www.whitehouse.gov/briefing-room/presidential-actions/2023/04/06/executive-order-on-modernizing-regulatory-review/; *see also* Laurens Swinkels, *Trading Carbon Credit Tokens on the Blockchain*, 7–8 (Mar. 5, 2023), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4378871 (stating voluntary carbon credits were estimated to be valued at 328 million USD in 2020).

310 *See* Exec. Order No. 14008, 86 Fed. Reg. 7,619 (Jan. 27, 2021).

311 *Id.*

312 *Id.* at 7,622.

3. LIMITATIONS AND UNINTENDED CONSEQUENCES

The proposed regulation regarding MRV processes on standards organizations would help alleviate many concerns surrounding the legitimacy of carbon credits within the VCM. However, the proposed solution has its own limitations. A universal carbon calculation standard would not entirely eradicate permanence and additionality concerns. For example, the EU Emissions Trading System (ETS) currently has a uniform carbon calculation standard in which all projects must, yet additionality is still a concern in the market.[313] The same would apply for the VCM; the new regulation would significantly decrease the amount of additionality concerns with carbon registries calculation methods but, nonetheless, there would still be more granular difficulties within the approved methodologies listed by the CFTC. Non-permanence concerns, similar to additionality, would not be completely eradicated, despite the standard requiring stronger proof from project applicants. The EU ETS is currently experiencing limited issues of non-permanence despite there being a uniform standard.[314]

Finally, the proposed standard may drive leakage outside of the U.S. VCM to unregulated offshore markets. Stricter controls regarding companies' representation of emissions reductions from credits generated in the unrelated markets could address some of this concern. To the extent that U.S. companies are using credits, regardless of where they are generated, the SEC may be able to address varying standards internationally through its rules governing climate related disclosures of public companies. Similarly,

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313 *See* Axel Michaelowa, et at., *Evolution of International Carbon Markets: Lessons for the Paris Agreement*, 10 WIRES CLIMATE CHANGE, Aug. 16, 2019, at 7.

314 *See* ABDEL-MOHSEN O. MOHAMED ET AL., SUSTAINABLE UTILIZATION OF CARBON DIOXIDE IN WASTE MANAGEMENT 107 (2023).

revisions to the FTC's Green Guides could require that companies marking carbon offsets must meet the CFTC standards or equally stringent equivalents.

Despite the limitations of a uniform carbon calculation standard, the implementation of a new policy would address the worst offenders generating faulty carbon credits. Additionally, new technological innovation may help MRV processes and solve non-permanence issues with nature-based projects.[315]

Another concern of a regulated uniform carbon calculation standard would be the unintended financial consequences the new policy would bring to the VCM. First, smaller project owners who lack the capital to comply with a uniform standard may face increased barriers to entry. This could limit scalability and growth, restrict competition, and artificially inflate prices due to a limited number of participants being able to afford barrier to entry. Second, the standard could make the price of offsets rise and cause companies to shift that rise in cost to their consumers.

As unintended consequences surface, the CFTC and other federal agencies can cooperate to address emergent issues within the VCM. This is already taking shape. For example, on January 31, 2023, the FTC announced it was extending its public comment period to discuss updates to their "Green Guides" to April 24, 2023.[316] The new Guides will hopefully include more information on claims related to carbon offsets.[317] Despite the consequences of the new standard from the CFTC, it would significantly reduce the amount of faulty carbon credits within the VCM and ultimately achieve a stronger approach to the

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315 *See generally* Woo et al., *supra* note 109.

316 Press Release, Fed. Trade Comm'n, Fed. Trade Comm'n Extends Pub. Comment Period on Potential Updates to its Green Guides for the Use of Env't Mktg Claims (Jan. 31, 2023).

317 *FTC Extends 'Green Guides' Comment Period to April 24*, GREENBERG TRAURIG LLP, (Feb. 6, 2023), https://www.gtlaw.com/en/insights/2023/2/ftc-extends-green-guides-comment-period-to-april-24.

fight against climate change.

V. CONCLUSION

The current infrastructure of the VCM in the U.S. is flawed and could cause significant environmental harm. The lack of regulation and oversight allows market participants to engage in fraudulent and environmentally damaging practices. The best solution to address these issues is for a federal agency to step in and regulate the MRV credit calculation process in the voluntary carbon market. The CFTC would be the most appropriate agency to regulate the market due to their expertise in financial markets and their authority to regulate derivatives markets.

The CFTC would be able to create a comprehensive regulatory framework that addresses additionality, faulty credits, and permanence concerns on the creation and verification of carbon credits in the VCM. Collaboration with other federal agencies, such as EPA and the SEC, would ensure that the regulations are effective in reducing carbon emissions and protecting the environment. SROs could be utilized to enforce the regulations on market participants, creating supplemental regulation enforcement that combines government oversight with industry expertise. The implementation of a comprehensive regulatory framework for the VCM is crucial for reducing environmental harm and combating climate change. By creating a regulatory framework that is effective and practical, the CFTC could ensure that the VCM contributes to a sustainable future for all.

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Talking Trash: Why the United States Needs to Do More to Reduce Aquatic Trash

By Klara Henry

I. How Does the United States Regulate Trash?.....120

II. Aquatic Trash: A Serous Detriment to Health and the Environment.....123

III. The Clean Water Act and Section 303(d) Imperfectly Address Current Issues 125

IV. Success Stories: California and the Anacostia River.....129

A. Los Angeles Uses a TMDL Incorporating Stormwater Permits.....129

B. San Francisco Uses MS4 Permits to Reduce Aquatic Litter From Stormwater 133

C. California has Mounted an Ambitious State-wide Plan.....135

D. The Anacostia River Provides Insight on Interstate Trash Regulation.....136

V. How to Supplement Existing Measures.....137

I. HOW DOES THE UNITED STATES REGULATE TRASH?

Trash in United States' (U.S.) waterways, or "aquatic trash," is a wicked problem any way you slice it. Effectively reducing its impact requires melding law, engineering, community involvement, and activism, as well as shifting consumer habits, particularly regarding the "throwaway culture" of single-use plastics and Styrofoam. Debris in waterways is more than just aesthetically unappealing: it diminishes water quality, harms wildlife, threatens public health, and when it makes its way into the ocean, adds to the

ever-growing garbage patches killing marine life. There are many different sources of aquatic trash, including pedestrian litter, waste from illegal dumping, and litter from garbage and recycling bins.[1] Land-based debris, which constitutes eighty percent of aquatic trash, can end up in waterways from wind and direct dumping and littering into waters, but most trash makes its way into waterways through storm water runoff.[2] Programs aimed at reducing aquatic trash can take the form of "upstream" mechanisms reducing trash loads *before* they get into water, or "downstream" mechanisms removing trash already in waterways. While no uniform federal system is in place addressing aquatic trash, several U.S. municipalities have implemented downstream programs to decrease litter in watersheds, such as the creation of Total Maximum Daily Loads (TMDLs) for trash, which sets pollutant ceilings for trash-impaired water bodies.[3]

The Clean Water Act (CWA) does not mandate any regulatory mechanisms for state and local governments to reduce trash in their waterways.[4] In the TMDL process, states generally take the lead in both the development and implementation of a given TMDL, with the Environmental Protection Agency (EPA) overseeing efforts by establishing some minimum requirements, providing funding, and supplying technical assistance.[5] However, TMDLs have generally been considered a weak method of

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1 *Learn About Aquatic Trash*, U.S. ENV'T PROT. AGENCY, https://www.epa.gov/trash-free-waters/learn-about-aquatic-trash#:~:text=Trash%20Capture%20Technologies-,What%20is%20Aquatic%20Trash%3F,comes%20from%20land%2Dbased%20activities (last updated July 5, 2023).

2 *Id.*; *Sources of Aquatic Trash*, U.S. ENV'T PROT. AGENCY (Jan. 19, 2021), https://19january2021snapshot.epa.gov/trash-free-waters/sources-aquatic-trash_.html.

3 *See Overview of Total Maximum Daily Loads (TMDLs)*, U.S. ENV'T PROT. AGENCY, https://www.epa.gov/tmdl/overview-total-maximum-daily-loads-tmdls (last updated Nov. 14, 2023).

4 *The Clean Water Act and Trash-Free Waters*, U.S. ENV'T PROT. AGENCY (Jan. 19, 2021), https://19january2021snapshot.epa.gov/trash-free-waters/clean-water-act-and-trash-free-waters.

5 U.S. GOV'T ACCOUNTABILITY OFF., GAO-14-80, CLEAN WATER ACT: CHANGES NEEDED IF EPA PROGRAM IS TO HELP FULFILL THE NATION'S WATER QUALITY GOALS 18, 20 (2013).

addressing nonpoint sources of pollution: While eighty-three percent of TMDLs in a 2014 study achieved targets for point source pollution, only twenty percent met targets for nonpoint sources.[6] Because most trash enters waterways via runoff—a nonpoint source of pollution—and the CWA addresses nonpoint source pollution "largely through voluntary means," EPA lacks much-needed authority to reduce trash pollution.[7]

To effectively address the aquatic trash problem, more federal oversight regulating trash pollution—rather than the ad-hoc systems currently in place—is a must. Merely *allowing* municipalities to develop trash-specific TMDLs is not enough. Additionally, if trash production continues unabated, particularly single-use plastics, even the most stringent aquatic trash reduction efforts may be ineffective. Single-use plastic production rose globally by six million tons between 2019 and 2021, and the plastics crisis is likely to get "significantly worse" before it abates.[8] Accordingly, restrictions or outright bans on some of the biggest contributors to aquatic trash must also take effect. Potential Styrofoam and plastic-bag bans are two examples of this strategy.

In addition to uniform federal standards regulating trash pollution, infrastructure must incorporate improved trash-capture devices at sewer and stormwater systems to remove litter before it reaches waterways and, where possible, use community-based efforts to improve local water bodies impaired by trash. Although these changes could be effective, there is no replacement for increased federal regulation of nonpoint-source

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6 *Id.* at 35.

7 *Id.* at 15.

8 Erick Marciscano, *Single-Use Plastic Production Rose Between 2019 and 2021 Despite Pledges*, REUTERS (Feb. 6, 2023), https://www.reuters.com/business/environment/single-use-plastic-waste-rises-2019-2021-despite-pledges-2023-02-06/#:~:text=SINGAPORE%2C%20Feb%206%20(Reuters),new%20research%20showed%20on%20Monday.

pollution and enforcement against water quality violations.

II. AQUATIC TRASH: A SEROUS DETRIMENT TO HEALTH AND THE ENVIRONMENT

Aquatic trash affects wildlife, ecosystems, public health, and local economies.[9] Experts estimate that eight million tons of plastic end up in the ocean each year, making plastics the most extensive form of aquatic litter by a huge margin.[10] Sea turtles and other marine mammals routinely mistake pieces of plastic for food, and ingestion can lead to malnutrition, internal injuries and blockages, and starvation.[11] Recovery plans for several endangered or threatened different turtles, so listed under the Endangered Species Act, all include marine debris as a high-priority threat to species' recovery.[12] Abandoned fishing gear is another significant source of aquatic trash, because ropes and lines can trap animals and contribute to injury and death, particularly for turtles and seabirds.[13] Trash may also damage habitats by smothering aquatic plants and corals, stunting plant growth, or by providing a means for invasive species to enter ecosystems.[14]

Trash in waters also implicates public health and local economies. Mismanaged trash can cause fires, leach chemicals, and serve as a breeding ground for disease-spreading bacteria and pests.[15] Certain types of aquatic debris—like

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9 *Id.*
10 *Marine Debris: Impacts on Ecosystems and Species: Before the Subcomm. On Interior, Env't, and Related Agencies of the H. Comm. On Appropriations*, 116th Cong. (2019) https://www.doi.gov/ocl/marine-debris-impacts.
11 *Id.*
12 *Id.*
13 *Id.*
14 *Learn About Aquatic Trash*, *supra* note 1.
15 *Id.*

broken glass, used diapers, hypodermic needles, and other medical waste—are particularly dangerous to human health.[16] Cleanup is also expensive, and without funding, many communities must rely on volunteer efforts.[17] Finally, aquatic trash may harm local economies that depend on tourism or fishing. Litter can damage boats by clogging intake pipes or damaging propellers, and lead to reductions in fish populations, chilling interest in water-based recreation or fishing.[18]

Recognizing the serious ramifications of mismanaged trash, the U.S. spends about $11.5 billion per year to clean up litter, according to a 2009 study.[19] In Texas, aquatic trash is especially problematic. The state "accumulates [ten] times more trash along its coast than any other Gulf state," primarily in the form of plastics such as straws and bottles.[20] The City of Austin conducted a 2022 study on aquatic trash and mitigation methods, noting that some of the most frequent types of trash in Austin waterways are single use plastic bags, water bottles, Styrofoam, and cigarettes.[21] As the population grows, so too does the amount of litter entering waterways, particularly in Lady Bird Lake and Lake Austin.[22] The City urged trash reduction methods, particularly for Lake Austin, an important drinking water source.[23] The stakes are high, but much of the existing regulation is inadequate to address aquatic trash.

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16 U.S. ENV'T PROT. AGENCY REGION IX, LOS ANGELES AREA LAKES TOTAL MAXIMUM DAILY LOADS FOR NITROGEN, PHOSPHORUS, MERCURY, TRASH, ORGANOCHLORINE PESTICIDES AND PCBS 3-9 (2012).

17 *Id.*

18 *Id.*

19 CITY OF AUSTIN, WATERSHED PROT. DEP'T, TRASH IN CREEKS: BENCHMARKING SOLUTION SPACE AND RESOURCES 2 (2022).

20 *Trash Free Waters Grant Update*, TOTAL MAXIMUM DAILY LOAD NEWS. (N. Cent. Tex. Council of Gov'ts, Arlington, Tex.), June 2021.

21 CITY OF AUSTIN, WATERSHED PROT. DEP'T, *supra* note 19, at 41.

22 *See id.* at 35.

23 *See id.* at 42.

III. THE CLEAN WATER ACT AND SECTION 303(D) IMPERFECTLY ADDRESS CURRENT ISSUES

Under Section 303(d) of the CWA, to address nonpoint sources of pollution, states must establish water quality goals for all intrastate waters.[24] In doing so, states determine the uses of each water (e.g., recreational) and establish corresponding water quality criteria, subject to EPA approval.[25] Once the criteria are approved, states have a duty to monitor their waterways and list those waterways that fail to meet the state's water quality standards (even with industrial and municipal pollution dischargers implementing control technology), and submit the list to EPA every two years along with the pollutant(s) of concern for each water body—the 303(d) list.[26] States also establish priority rankings for these waters and develop TMDLs, defined as the maximum amounts of certain pollutants a waterbody can receive (with an additional margin of safety) and still meet quality standards.[27] TMDLs are based on the identity of pollutants, the overall extent of pollution, and the use(s) of the water body.[28] TMDLs therefore act as both quantitative and qualitative criteria, a so-called "pollution budget," helpful for determining which pollutants must be reduced to meet quality standards and where to concentrate reduction efforts.[29]

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24 *See* 33 U.S.C. § 1313(d).

25 *Id.* § 1313(c)(2)(A).

26 *Id.*

27 *Overview of Identifying and Restoring Impaired Waters Under Section 303(d) of the CWA,* U.S. ENV'T PROT. AGENCY, https://www.epa.gov/tmdl/overview-identifying-and-restoring-impaired-waters-under-section-303d-cwa (last updated Aug. 11, 2023).

28 *Developing Total Maximum Daily Loads (TMDLs)*, U.S. ENV'T PROT. AGENCY, https://www.epa.gov/tmdl/developing-total-maximum-daily-loads-tmdls#:~:text=The%20TMDL%20establishes%20a%20target,model%20and%20the%20actual%20environment (last updated Aug. 11, 2023).

29 CLAUDIA COPELAND, CONG. RSCH. SERV., RL42752, CLEAN WATER ACT AND POLLUTANT TOTAL MAXIMUM DAILY LOADS (TMDLS) 1 (2014).

TMDLs are flexible tools. States and municipalities use them to allocate necessary pollution reductions across a range of sources, for example, nonpoint sources like fertilizer runoff and point sources like discharge from a specific manufacturing plant.[30] TMDLs may also be forward-looking; they can consider projected growth that could lead to an increase in overall pollution levels.[31] EPA's role in the section 303(d) listing process is to review and approve a state's impaired waters and corresponding TMDLs—if a state fails to properly identify and develop necessary TMDLs, the CWA requires that EPA undertake the work itself (though while EPA makes its own TMDL assessment, the agency is *not* permitted to actually implement any TMDLs).[32] However, EPA does not publish water quality criteria for trash, nor does it promulgate testing methodologies for trash to be evaluated as a source of pollution; it merely "does not prohibit" municipalities from establishing their own criteria for trash pollution.[33]

Decades after the enactment of the CWA, many U.S. water bodies still do not meet water quality standards, and many states have been exceptionally sluggish in developing TMDLs to mitigate pollution.[34] The TMDL process is a highly technical one, and many states historically have not had the resources to consistently perform baseline water quality testing and TMDL analyses.[35] Though EPA must intervene when states cannot prepare TMDLs themselves, the agency has been "reluctant" to do so and can lack the necessary

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30 *Id.*

31 *What are TMDLs?* CAL. WATER BDS., https://www.waterboards.ca.gov/rwqcb2/water_issues/programs/TMDLs/whataretmdls.html (last updated Mar. 23, 2018).

32 COPELAND, *supra* note 29, at 2.

33 *The Clean Water Act and Trash-Free Waters, supra* note 4.

34 COPELAND, *supra* note 29, at 2.

35 *Id.*

resources.[36] Another difficulty inherent in the TMDL process is that for those waters spanning multiple states, states may address only the individual stream segments in their jurisdiction, rather than developing multi-jurisdictional TMDLs and coordinating efforts with other states in a more holistic watershed approach.[37] When states do develop joint TMDLs, it is difficult for each state to compromise its own funding and priorities alongside other states.[38] A 2006 study found that the basis for listing and delisting a water body under section 303(d) varied considerably by state, and many listing determinations were based on insufficient water quality information—different states use different metrics to evaluate water quality, measure at different frequencies, and utilize different levels of specificity in their implementation and monitoring programs.[39] Additionally, states establish narrative criteria to measure trash pollution (instead of numeric criteria), which results in significant variance and more subjective assessments.[40]

As a result, the TMDL process is riddled with inconsistencies and confusion regarding *what* constitutes "impaired," making it very difficult to determine *how* to remedy impairments.[41] TMDLs are also generally very costly and can take many years to establish and receive final approvals.[42] For example, the State of California estimates that developing a TMDL for the San Francisco Bay takes four to six years, depending on

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36 *Id.*

37 *Id.* at 10.

38 *Id.*

39 Arturo Keller & Lindsey Cavallaro, *Assessing the US Clean Water Act 303(d) Listing Process for Determining Impairment of a Waterbody,* 86 J. OF ENV'T MGMT. 699, 710 (2008).

40 *See* OFF. OF INSPECTOR GEN. U.S. ENV'T PROT. AGENCY, NO. 21-P-0130, EPA HELPS STATES REDUCE TRASH, INCLUDING PLASTIC, IN U.S. WATERWAYS BUT NEEDS TO IDENTIFY OBSTACLES AND DEVELOP STRATEGIES FOR FURTHER PROGRESS 4 (2021).

41 *See* U.S. GOV'T ACCOUNTABILITY OFF., GAO-00-54, WATER QUALITY: KEY EPA AND STATE DECISIONS LIMITED BY INCONSISTENT AND INCOMPLETE DATA (2000) (emphasizing how inconsistencies in identifying impaired waters have hindered efforts to develop effective TMDL plans).

42 *The Clean Water Act and Trash-Free Waters, supra* note 4.

"scientific and policy issues, the availability of scientific information, and whether additional research studies and data are needed."[43] Development involves several sub-steps: creating a project plan with a description of the water body and scope of the TMDL, developing a TMDL project report and implementation plan, and amending the Water Quality Control Plan for the San Francisco Bay Basin.[44]

To address aquatic trash, municipalities may also rely on Municipal Separate Storm Sewer System (MS4) permits under the National Pollutant Discharge Elimination System (NPDES) program, which may define standards limiting trash from stormwater outlets entering local waters and require a permit for trash-containing stormwater runoff.[45] Municipalities with trash-specific TMDLs in place could augment TMDLs with MS4 permits to restrict the amount of litter entering waters at storm and sewer systems. By targeting stormwater, the single largest contributor to aquatic trash, NPDES and MS4 permits can help mitigate aquatic trash in high producing areas like urban roadways.

Strong weather patterns often lead to increased trash entering waterways. Some municipalities use combined sewer and stormwater systems, and direct the runoff to a treatment plant prior to discharge into local water.[46] During strong storms with heavy rainfall, these combined sewer and stormwater systems may become overwhelmed and release untreated water into large water bodies.[47] MS4 areas separate stormwater runoff

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43 *What Is TMDL?,* CAL. WATER BDS., https://www.waterboards.ca.gov/centralcoast/water_issues/programs/tmdl/ (last updated Mar. 21, 2019).

44 *Id.* The Water Quality Control Plan for the San Francisco Bay Basin legally establishes the TMDL and specifies compliance requirements. *Id.*

45 *Id.*

46 *See* U.S. GOV'T ACCOUNTABILITY OFF., GAO-23-105285, CLEAN WATER ACT: EPA SHOULD TRACK CONTROL OF COMBINED SEWER OVERFLOWS AND WATER QUALITY IMPROVEMENTS (2023).

47 *The Clean Water Act and Trash-Free Waters, supra* note 4.

to water bodies *without* first treating it—in urban areas that have MS4, stormwater is the primary contributor of trash to water bodies.[48] According to EPA, "most" MS4 permits in the U.S. contain specific language about trash and may complement TMDLs—since TMDLs are costly and time-consuming, some jurisdictions choose to write enforceable trash provisions directly into MS4 permits to require trash reduction without relying exclusively on TMDLs.[49]

Trash-specific TMDLs have gained traction in several areas of the U.S. and make up for some of the inherent shortcomings of using the CWA to regulate aquatic trash. Since 1996, over 200 waters among seven states have had specific TMDLs in place for trash or debris, with some jurisdictions supplementing the TMDL with stormwater permits: Los Angeles (LA), San Francisco, California as a whole, and the Anacostia River each provide important insight into the successes and shortcomings of TMDLs for aquatic trash.[50]

IV. SUCCESS STORIES: CALIFORNIA AND THE ANACOSTIA RIVER

A. LOS ANGELES USES A TMDL INCORPORATING STORMWATER PERMITS

California has stood at the vanguard of the war against aquatic trash. LA started adding waters to the section 303(d) list for trash impairment in 1996, and the region now has over ten trash TMDLs in place.[51] In 2001, the LA Regional Water Quality Control Board established a trash TMDL in the LA River, which set the trash load at zero.[52] This required the NPDES permit, which regulated stormwater discharges from LA County and

48 *Id.*
49 *Id.*
50 *Id.*
51 *Id.*
52 *Id.*

eighty-four other entities, to comply with the "zero-trash" mandate; though twenty-two cities affected by the new TMDL sued EPA on the zero-trash standard, the requirement was allowed to stand, as a variety of measures could be used to attain the zero-trash requirement.[53]

In 2008, the LA River trash TMDL went into effect, with its mandates simultaneously incorporated into the stormwater permits of LA County, forty-two cities, and California's Department of Transportation.[54] The TMDL demanded a forty percent trash reduction from the baseline level in the first year, with a ten percent reduction each year thereafter.[55] In meeting this requirement, permittees could opt for one of two trash-capture devices (TCDs) in storm drains, which act as physical barriers to prevent trash pollution entering storm drains, catching and holding onto waste, and requiring only seasonal cleaning.[56] Permittees could choose full capture devices, which capture all particles less than or equal to five millimeters in diameter, or opt for partial capture devices in tandem with "institutional controls" like increased street sweeping and more aggressive littering bans.[57]

The City's Bureau of Sanitation and Environment proved a crucial ally in the new efforts, designating trash "hot spots" in an online database and mapping high, medium, and low trash generation areas.[58] With limited resources to achieve compliance, and a vast urban network of possible trash-producing areas, it was crucial to focus resources

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53 *See* City of Arcadia v. Env't Prot. Agency, 411 F.3d 1103, 1105 (9th Cir. 2005).

54 Megan Herzog, *Zero Trash: Using the Clean Water Act to Control Marine Debris in California*, LEGALPLANET (Jan. 26, 2015), https://legal-planet.org/2015/01/26/zero-trash/.

55 *Id.*

56 *Id.*

57 *Id.*

58 FRIENDS OF THE LA RIVER, TRASH REDUCTION IN THE LOS ANGELES RIVER: EVALUATING CHANGES OVER TIME 17 (May 2021).

where the trash production was greatest.

The LA area, responsible for 2.5 million pounds of California's annual 5.4 million-pound baseline load, reached compliance with its mandated 100% trash load reduction "almost exclusively" by using full trash capture devices.[59] The City spent $75 million by retrofitting thousands of existing catch basins to meet the "full capture" standard and simultaneously allow the free-flow of rapid waters to protect cities against flooding, and by adding about a dozen large, new capture devices.[60] The massive effort has been quite successful: the installation of trash capture devices by the 42 cities subject to the LA River trash TMDL prevented over 3,300 tons of trash from entering the river from 2010 to 2011, and the 2012 seventy percent trash reduction target was met a full year earlier.[61] However, the increased efforts came with a hefty price tag: Communities in the LA region with a trash TMDL in place spend an average of $5.3 per resident per year more than communities without such a TMDL.[62] *Not* having adequate systems in place to decrease aquatic trash may do significantly more harm on the national scale, but it could be a hard sell for communities without California's funding.

LA trash TMDLs are similarly strict for its lakes: For four LA-area lakes (Legg Lake, Peck Road Park Lake, Lincoln Park Lake, and Echo Park Lake), EPA implemented the loading capacity to zero allowable trash.[63] This determination likewise reflects the understanding that "waters shall not contain floating materials including solids, liquids,

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59 *The Clean Water Act and Trash-Free Waters*, *supra* note 4.

60 *Id.*

61 *See Total Maximum Daily Load Progress Report*, CAL. STATE WATER RES. CONTROL BD. (Sept. 2012).

62 CAL. ENV'T PROT. AGENCY STATE WATER RES. CONTROL BD., DRAFT AMENDMENTS TO STATEWIDE WATER QUALITY CONTROL PLANS TO CONTROL TRASH, C-1 (June 2014), https://www.waterboards.ca.gov/water_issues/programs/trash_control/docs/trash_sr_061014.pdf.

63 ENV'T PROT. AGENCY, LOS ANGELES AREA LAKES TOTAL MAXIMUM DALY LOADS FOR NITROGEN, PHOSPHORUS, MERCURY, TRASH, ORGANOCHLORINE PESTICIDES AND PCBS, ES-2 (Mar. 26, 2012).

foams, and scum, in concentrations that cause nuisance or adversely affects beneficial uses."[64]

Echo Park Lake, in particular, has a tumultuous trash-related history—first identified as impaired in 2006, the City of LA earmarked over forty-five million dollars in 2010 toward cleanup and revitalization, and installed a trash capture device in a storm drain inlet outside the lake's boundary to prevent litter from entering its waters.[65] Since 2019, homeless individuals moved in greater numbers to the banks of the lake, growing to nearly 200 tents over the course of a year.[66] The City forced out the encampment, facing significant outcry from the community and activists, and spent one million dollars cleaning out over thirty-five tons of trash left behind.[67] The situation is both complex and tragic—priced out of LA's prohibitively expensive housing market, the homeless population on the lake had no better options, but their presence undid some of the progress made toward reducing the trash in the lake.[68]

While Echo Park Lake has received a lot of media coverage and discussion of its history, it is more difficult to find comprehensive information regarding the success of other trash-specific TMDLs for LA lakes. This seems to reflect one of the most serious shortcomings of TMDLs—a lack of consistent data. While EPA has increased efforts to

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64 *Id.* at 2-4.

65 *Echo Park Lake,* L.A. SANITATION & ENV'T, https://www.lacitysan.org/san/faces/wcnav_externalId/s-lsh-wwd-wp-po-ep?_adf.ctrl-state=17ivgub6a4_1&_afrLoop=14650802768796798&_afrWindowMode=0&_afrWindowId=null#!%40%40%3F_afrWindowId%3Dnull%26_afrLoop%3D14650802768796798%26_afrWindowMode%3D0%26_adf.ctrl-state%3D17ivgub6a4_5 (last visited Oct. 20, 2023).

66 Benjamin Oreskes & Emily Alpert Reyes, *Echo Park Lake to Reopen May 26, Two Months After Forced Removal of Homeless Campers*, L.A. TIMES (May 19, 2021), https://www.latimes.com/homeless-housing/story/2021-05-19/echo-park-lake.

67 *Id.*

68 *See id.*

publicize data, including aggregation of water quality statistics from different databases through the "Water Quality Framework," there is still a dearth of consistent data for existing TMDLs.[69] The lack of information makes it difficult to draw consistent conclusions as to whether TMDLs work when they are implemented, and whether they are successful only when used in tandem with other programs to reduce trash load, like MS4 permits.

B. San Francisco Uses MS4 Permits to Reduce Aquatic Litter From Stormwater

The San Francisco Bay Area has primarily, and successfully, used MS4 permitting to tackle aquatic trash.[70] The City of San Jose uses trash capture devices targeted at creek and shoreline cleanup efforts, works with nonprofits and local community groups, and has implemented "Bring Your Own Bag" and "Foam Food Container" ordinances.[71] The combination of these efforts led to a staggering seventy-nine percent total reduction in trash load for San Jose waters from 2009 to 2017.[72] A suburb of San Jose, Milpitas, serves as a useful case study with rich data. The city operates 262 TCDs, and has done so since 2017.[73] With a population of 80,273 in 2020 and covering 13.6 square miles, the city generates significant volume of trash, which often ends up in urban creeks and the San Francisco Bay Estuary.[74] In 1990, the San Francisco Bay Regional Water Quality Control Board issued

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69 U.S. Gov't Accountability Off., *supra* note 5.

70 Napp Fukuda, Assistant Director of Environmental Services, City of San Jose, Oral Abstract on Stormwater Trash Reduction Success Stories and Remaining Challenges (2017).

71 *Id.*

72 *Id.*

73 Joseph Aguiera, San Jose ScholarWorks, City of Milpitas Trash Capture Device Program: An Evaluation of System Performance and Compliance with the Municipal Regional Permit 6 (2022).

74 *Id.* at 7–8.

the first NPDES permit for seventy-six municipalities and agencies in the San Francisco Bay Area, called the Municipal Regional Permit (MRP).[75] To facilitate the MRP, thirteen cities and towns in Santa Clara County, including Milpitas, developed an agreement to make sure each municipality fulfills the requirements; the association also produces an annual report on its progress.[76]

The MRP establishes target thresholds for the amount of trash entering stormwater conveyance systems, creates best practices towards reducing aquatic trash loads, and requires permittees to "maintain, and provide for inspection . . . full trash capture systems."[77] In 2009, Milpitas began collecting trash from storm drain inlets to gather data regarding the types of trash and trash load rates ("load" is defined as the amount of trash generated minus the amount of trash intercepted).[78] This study helped develop baseline criteria for trash generation, and formed the basis for outlining trash reductions: the MRP required Milpitas to meet a 70% reduction in trash load by July 1, 2017, 80% by July 1, 2019, and 100% by July 1, 2022.[79] To meet these strict reduction criteria, municipalities could use whatever trash control methods they deemed best, with no specified control method necessary so long as the total load met the prescribed decrease.[80] TCDs have made a massive difference for Milpitas, augmented by a 2016 ordinance banning grocery and retail stores from providing plastic grocery bags.[81]

Each year since the TCD program's implementation, Milpitas has seen overall

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75 *Id.* at 13.
76 *Id*. at 14.
77 *Id*. at 15.
78 *Id.* at 17–18.
79 *Id.* at 18.
80 *Id.*
81 *Id.* at 25.

reductions in trash load, and the city has performed in the top twenty-fifth percentile compared to co-permittees.[82] All other MRP permittees have likewise made considerable progress. Since each permittee is held to the same standards and generally the same equipment, engineering principles, and data collection process, their success thus far seems attributable to the use of TCDs, and not some individual fluke.[83] As for the broader goal of improving the quality of San Francisco Bay waters, that seems to be within reach, too. Before 2017, there was no system in place to prevent trash from reaching bay waters through storm drains.[84] Now, water quality has since improved under trash and debris metrics.[85]

C. CALIFORNIA HAS MOUNTED AN AMBITIOUS STATE-WIDE PLAN

California adopted a statewide trash-TMDL policy (Trash Amendments) in 2015 that applies to all state waters and requires every stormwater permit to be modified to include provisions for trash.[86] Trash includes plastics, aluminum, glass, steel, and other synthetic or natural packaging materials.[87] Stormwater permittees must create trash implementation plans to reach a zero trash goal by 2030.[88] Each plan uses a land-based approach where it must address high-trash generating areas on land like public transit corridors, high-density residential areas, and industrial- and commercially zoned land.[89] Like the LA River, permittees can choose to employ full trash capture devices or a mix of

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82 *Id.* at 54.
83 *Id.* at 53.
84 *Id.* at 54.
85 *Id.* at 54.
86 *The Clean Water Act and Trash-Free Waters*, *supra* note 4.
87 *Id.*
88 *Id.*
89 CAL. DEP'T OF TRANSP., STATEWIDE TRASH IMPLEMENTATION PLAN 1 (2019).

trash capture devices and institutional controls to meet the goals.[90] The policy extends beyond just geographic regions. It also requires that the California Department of Transportation, with its NPDES permit regulating stormwater discharges from its facilities, create its own plan to comply with the Trash Amendments on a statewide basis, a plan that excludes San Francisco and Los Angeles watersheds due to their existing region-specific trash requirements and trash TMDLs.[91] The noted that individual TMDLs are less useful than this state-based policy, stating that the state-based approach is "more efficient since it doesn't require a TMDL for each water body, which can be time consuming and expensive."[92] As the decade progresses, how close California comes to reaching its statewide goal will shed light on whether such far-reaching trash reduction policies are feasible for the rest of the U.S.

D. THE ANACOSTIA RIVER PROVIDES INSIGHT ON INTERSTATE TRASH REGULATION

The Anacostia River serves as another important case study in trash-TMDLs. Regulations have significantly reduced trash, with projects paralleling those of San Francisco.[93] The Anacostia runs through Maryland and D.C., and in 2010, it became the first body of water covering multiple jurisdictions to have a trash TMDL.[94]

The TMDL, developed in partnership with D.C., Montgomery County, Prince George County, the Maryland Department of Environment, and EPA Region III, includes

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90 *Id.*

91 *Id.* at iii.

92 *The Clean Water Act and Trash-Free Waters, supra* note 4.

93 *Steps Taken to Reduce Trash in Anacostia,* U.S. ENV'T PROT. AGENCY (Apr. 14, 2016), https://www.epa.gov/dc/steps-taken-reduce-trash-anacostia#:~:text=The%20District%20and%20Prince%20George's,cleanups%20and%20expanded%20street%20sweeping.

94 *Id.*

waste allocations for both D.C.'s combined sewer system and MS4.[95] D.C. reduced trash entering the Anacostia by imposing a fee on plastic bags, a ban on Styrofoam, enhanced street sweeping in "hot spots," and "Clean Teams" funding to increase litter pick-up.[96] D.C. also developed a "Clean Rivers Project" to capture and clean wastewater during periods of rainfall, reducing the amount of water from combined sewer overflows entering the Anacostia and Potomac Rivers.[97] Adding catch basins in tributaries of the Anacostia has also decreased the trash load.[98] Catch basins are a "cheap and easy fix" costing about $8,000 to retrofit and $15,000 to equip with a granulated carbon filter to further reduce load.[99] Trash reduction in Anacostia has been successful. D.C. cut trash to the river by 112,582 pounds in 2015 using primarily MS4 actions.[100]

V. HOW TO SUPPLEMENT EXISTING MEASURES

Trash TMDLs, particularly in combination with other restrictions on generating trash, may make a significant difference in the war on trash. However, it is not enough to merely *allow* municipalities with a demonstrated interest to address the issue. The U.S. Government Accountability Office recommends that, to increase the effectiveness of TMDLs in waters impaired by nonpoint-source pollution, EPA develop and issue new regulations *requiring* what is currently just optional, particularly comprehensive plans to

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95 DISTRICT DEP'T OF ENV'T, STORMWATER MGMT. DIV., ANACOSTIA RIVER WATERSHED TRASH TMDL IMPLEMENTATION STRATEGY 1 (2013) https://doee.dc.gov/sites/default/files/dc/sites/ddoe/page_content/attachments/Draft_Strategy_For_Public_Input.pdf.

96 *Id.* at 5–6.

97 *The Clean Rivers Project*, D.C. WATER, https://www.dcwater.com/cleanrivers (last visited Oct. 21, 2023).

98 Erica Goldman, *Taking Out the Trash*, CHESAPEAKE Q., Mar. 2010, at 2.

99 *Id.* at 15.

100 *Steps Taken to Reduce Trash in Anacostia, supra* note 93.

monitor water bodies and verify their quality is indeed improving.[101]

EPA asserts that it has been emphasizing monitoring and implementation of TMDLs through efforts like its "2022 Vision," a document that "outline[s] aspirations and highlight[s] opportunities to implement CWA Section 303(d) program activities" in areas like data analysis, prioritization, and partnerships.[102] But this "vision" does not carry force of law and does not significantly bolster the weaknesses of the existing TMDL program. In 2020, the agency expressly rejected calls for it to issue regulations pertaining to nonpoint-source pollution, claiming that it could not do so under its current authority, a position it continued to hold in 2023.[103] Similarly, EPA's "Trash Free Waters" program lacks legal force. In 2012, the Center for Biological Diversity petitioned the agency to specifically address water quality criteria for plastic pollution under the CWA, which the EPA declined to do, instead launching the "Trash Free Waters" program.[104] The program provides information on best practices, funding and technical assistance towards developing source reduction programs, research on aquatic trash, and trash capture.[105] However, this project is merely a voluntary partnership to address aquatic trash, and it

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101 U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 5.

102 *The Vision for the Clean Water Act Section 303(d) Program*, U.S. ENV'T PROT. AGENCY (Jan. 26, 2023), https://www.epa.gov/tmdl/Vision#:~:text=The%20Clean%20Water%20Act%20Section%20303(d)%20program%20strives%20to,protect%20the%20Nation's%20aquatic%20resources.

103 U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 5.

104 Rachael E. Salcido, *Plastic Activism and the Clean Water Act*, 52 ENV'T L. 307, 316 (2022).

105 *EPA'S Trash Free Waters Program: Supporting Healthy Communities and Vibrant Ecosystems*, U.S. ENV'T PROT. AGENCY https://nepis.epa.gov/Exe/ZyNET.exe/P1014V9B.TXT?ZyActionD=ZyDocument&Client=EPA&Index=2016+Thru+2020&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C16thru20%5CTxt%5C00000029%5CP1014V9B.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL (last visited Nov. 26, 2023).

cannot compel any specific regulation of trash under the CWA.

EPA has tightened the proverbial reins on states' ability to access nonpoint source management and water pollution control grants, which financially decreases states' willingness to develop and implement nonpoint source management.[106] CWA section 319(h) funds are awarded each year to states to aid in developing components of nonpoint source programs.[107] States submit proposed funding plans to EPA and the agency reviews the proposals, which must be "consistent with grant eligibility requirements and procedures."[108] The majority of the funding goes toward restoring impaired waters, though states may use some portion of the funds toward high quality waters if their protection is a priority.[109] In 2014, EPA updated the grant guidelines, including a provision allowing states to use up to fifty percent of their "Nonpoint Source Program Funds" toward TMDL development, an increase from the prior allowance of twenty percent.[110] While states have latitude in what projects to use their grant funding towards, a state can only receive funding if EPA Regional Administrator determined that the state made "satisfactory progress" in the previous fiscal year towards meeting milestones in its Nonpoint Source Management Program.[111] Since its prior funding guidance, EPA has narrowed the review process of states' proposed nonpoint source management to ensure

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106 U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 5.

107 *319 Grant: Current Guidance*, U.S. ENV'T PROT. AGENCY, https://www.epa.gov/nps/cwa-ss319-grant-current-guidance (last updated July 20, 2023).

108 *Id.*

109 U.S. ENV'T PROT. AGENCY, NONPOINT SOURCE PROGRAM AND GRANTS GUIDELINES FOR STATES AND TERRITORIES 2 (2013), https://www.epa.gov/sites/default/files/2015-09/documents/319-guidelines-fy14.pdf.

110 *Id.* at 2.

111 U.S. ENV'T PROT. AGENCY, APPLYING FOR AND ADMINISTERING CWA SECTION 319 GRANTS: A GUIDE FOR STATE NONPOINT SOURCE AGENCIES 9 (2019), https://www.epa.gov/sites/default/files/2015-09/documents/319applying-guide-revised.pdf.

review of state plans is more consistent over time.[112]

Rather than merely allowing states to use a portion of their funding towards TMDL development, both *requiring* that they do so and tightening the criteria for evaluating past success in each TMDL plan's development and implementation. This could pressure states to prioritize TMDLs. Alternatively, part of the funding could be contributed to implementing trash-specific TMDLs. This assumes that TMDL development for nonpoint sources like litter is always a good use of grant money. However, given the relative success of trash-specific TMDLs in the jurisdictions that have adopted them, it seems likely that the weaknesses of the TMDL program as it pertains to litter is that it has not been used in enough regions consistently, not that the TMDL program *cannot* adequately address nonpoint sources.

The federal government has acknowledged that the U.S. has a trash problem. In April 2022, the Biden administration announced a plan to spend $895 million by 2027 to reduce plastic and other debris in oceans and estuaries.[113] Addressing Biden's plan, the EPA Assistant Administrator added that EPA is committed to cutting the amount of plastic waste coming from the U.S., and that reducing trash loads in waterways here will serve as a model for other nations struggling to manage aquatic litter.[114] EPA will also manage $132 million between 2022 and 2026 as part of the National Estuary Program, with plans to improve infrastructure relating to stormwater and septic systems.[115] As the federal

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[112] *Id.* at 31–32.

[113] Pam McFarland, *Biden Administration Amps Up Efforts to Reduce Aquatic Trash*, ENG. NEWS-REC. (Apr. 22, 2022), https://www.enr.com/articles/53979-biden-administration-amps-up-efforts-to-reduce-aquatic-trash.

[114] *Id.*

[115] *Id.*

government increasingly acknowledges the importance of reducing aquatic trash, it must exert pressure on states to identify and implement specific programs with this end in mind. In doing so, it must also move away from outdated and ineffective voluntary systems of trash mitigation.

The Anacostia River is still far from wholly trash-free, as are the waters of LA and San Francisco. But the relative success of trash reduction in major cities like D.C., Los Angeles and San Francisco makes it clear that it is possible to achieve real change with stricter trash regulation programs. Using a state-based approach, as California aims to do, and one that relies specifically on reducing trash discharge into storm drains, may be the most effective way to reduce aquatic trash long-term and avoid the ad hoc system of individual TMDLs. If successful, California would be the first to achieve a statewide goal of zero trash by 2030 and is in the best position to model what needs to be done to achieve this result elsewhere.

The CWA can still provide the legal basis to reduce aquatic litter. Water quality restoration is the objective of the CWA, and water quality is heavily impaired by aquatic litter.[116] Further, the CWA explicitly includes "garbage" as a pollutant.[117] While aquatic trash is not as easily regulated under the CWA as it can be both a point and nonpoint source of pollution, the connection between aquatic litter and diminished water quality is not a tenuous one. In 2019, the EPA Office of Inspector General evaluated EPA's programs as they relate to plastic pollution.[118] While not all aquatic litter is plastic-

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116 33 U.S.C. § 1251(a).

117 *Id.* at § 1362(6).

118 Memorandum from Kathlene Butler, Dir., Water Directorate, Off. of Audit and Evaluation, on the "Effectiveness of Clean Water Act to Protect from Plastic Pollution" to David P. Ross, Assistant Adm'r, Off. of Water, and Jennifer Orme-Zavaleta, Principal Deputy Assistant Adm'r for Sci., Off. of Rsch. and Dev. (Oct. 30, 2019).

derived, plastic makes up a huge percentage of aquatic trash, and the same tools to regulate plastic pollution in waters can regulate other forms of trash.[119] The report confirms that EPA may opt to employ specific water-quality standards to address plastic pollution, support state and local municipalities in trash control through MS4 permits, and identify impaired waters and establish TMDLs accordingly, all in line with the CWA's mandates.[120] The evaluation also confirms that as of now, "[t]he EPA and states have not widely applied all of the tools established by the Clean Water Act to reduce the trash . . . in U.S. waterways."[121]

Mandating compliance with the CWA has made a difference in regulating trash. In the case of the Anacostia River, now widely touted as having been a cleanup success, D.C. initially dragged out its submission of TMDL calculations "in plain disregard" of its duties under the CWA, taking almost two decades from the CWA's passage to list the Anacostia, and finally acting under judicial pressure.[122] In one of several cases prompted by Maryland and the District's failure to develop an adequate TMDL for Anacostia with EPA assistance, Chief Judge Royce Lamberth condemned both the EPA and local government failure to implement the CWA as it was intended: "The CWA was enacted in light of severe threats to the Nation's navigable waters, and it was intended to spur immediate action by both federal and state authorities . . . [D]espite the Act's *command* that States identify and develop TMDLs for implemented waters, the District and EPA spent 20 years *ignoring*

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119 *Id.*

120 *See generally* U.S. ENV'T PROT. AGENCY OFF. OF INSPECTOR GEN., EPA HELPS STATES REDUCE TRASH, INCLUDING PLASTIC, IN U.S. WATERWAYS BUT NEEDS TO IDENTIFY OBSTACLES AND DEVELOP STRATEGIES FOR FURTHER PROGRESS (May 11, 2021).

121 *Id.* at 4.

122 Madeleine Dwyer, *"Forgotten" by the Clean Water Act: The Anacostia River's Evolving Environmental Justice Problems*, 21 U. MD. L.J. RACE RELIG. GENDER & CLASS 311, 324–25 (2021).

these obligations and fighting attempts to compel them to act."[123]

While TMDLs and accompanying MS4 permits are far from perfect in addressing the problem of aquatic trash, they are worth fighting for. As a part of the effort to decrease aquatic trash, EPA must ensure states undertake more rigorous data collection in determining which waters are impaired for trash. Comprehensive and easily accessible online databases would likely make it simpler to identify impaired waters and discern patterns of trash production and help determine which systems *actually* reduce trash. Additionally, more stringent requirements for nonpoint source management and water pollution control grants could exert the necessary financial pressure to compel states to improve their trash management programs. Providing flexibility would be important—meeting incremental milestones toward trash reduction could earn states or large cities some federal funding towards other important environmental projects, emphasizing a "carrot" rather than "stick" approach.

States and local governments should also be allowed to choose from options in reducing trash. Entities could be allowed to employ full trash capture devices or a mix of trash capture devices and institutional controls to meet the goals, like many cities in California have done. Recognizing that there is no one-size-fits-all method is important for creating buy-in and systems that last—municipalities can take a more holistic approach and utilize different measures depending on budget, available resources, and varying geography.[124] But regulatory bodies must provide more guidance and oversight in reducing aquatic trash. The quality of our nation's waters and the health and wellbeing of its people

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[123] *Id.* at 327.
[124] AGUIERA, *supra* note 73, at 7.

depend on it.

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Judicial Review of Agency Actions: A Gap in the Texas APA and its Effect on Environmental Litigation

By Chloe Gossett

I. Introduction 146

II. The Texas APA's Background and Judicial Review of Agency Decisions in Context 147

III. Administrative Activities with a Right to Judicial Review 148

A. Activities Covered by the Texas APA's Contested Case Provision 150

B. Substantive Statutes Granting a Right of Review for Agency Action 154

C. The Administrative Decision Adversely Affects a Vested Property Right or Other Constitutional Right 157

IV. The Law Governing Judicial Review When the APA Does Not Apply.....160

A. The Applicable Standard of Review 161

1. *De Novo* Review For Issues of Statutory or Regulatory Interpretation 162

2. Substantial Evidence Review of Evidentiary Issues 164

3. Substantial Evidence *De Novo* or Pure *De Novo* Review for Evidentiary Issues 169

B. Supplementing the Administrative Record 170

V. Conclusion 173

I. INTRODUCTION

Agency decisions impact our lives every day. Whether agencies are confirming the safety of drinking water, registering a car to drive on the road, or certifying an elementary school teacher, their decisions have affected everyone's lives. The ubiquity of agencies makes the right to appeal their decisions in court of particular interest. This note discusses judicial review of agency decisions in Texas in several contexts.

First, this note provides background information, briefly discussing the history and relevance of the Texas Administrative Procedure Act (Texas APA) and the structure of administrative law in Texas.

Second, because there is no general right to judicial review of agency actions in Texas, this note assesses when a right to judicial review may exist. Agency actions may be subject to judicial review in three situations: (1) the agency actions fit within the Texas APA's provision for judicial review of contested cases and rulemaking, (2) the agency actions are within a substantive statute in which the legislature provided for judicial review of an agency action, or (3) the agency actions impair a vested property right or violate the constitution.

Third, this note examines the law governing judicial review of agency actions when the Texas APA's judicial review provision might not apply. This analysis focuses on two important and closely related questions: (1) what is the correct standard of review, and (2) when may a party supplement the administrative record to support that review?

Fourth, and finally, this note concludes by arguing for clarification of the law—either through Texas Supreme Court precedent or revision to the Texas APA—to provide a clearer framework for courts and litigants alike.

II. THE TEXAS APA'S BACKGROUND AND JUDICIAL REVIEW OF AGENCY DECISIONS IN CONTEXT

Over 150 state agencies in Texas govern various aspects of the lives of its residents.[1] These agencies range from the Texas Commission on Environmental Quality (TCEQ), which "strives to protect our state's public health and natural resources consistent with sustainable economic development,"[2] to the Texas Department of Motor Vehicles, which works "to serve, protect and advance the citizens and industries in the state with quality motor vehicle related services."[3]

Texas agencies sit within the executive branch of Texas's government and derive their authority from the Texas legislature. More than 100 years ago, the Texas Supreme Court recognized that the legislature may grant an executive agency power to fact-find when enforcing provisions of a statute in a quasi-judicial function.[4] Following the principle of separation of powers, agency adjudication, however, is not an exercise of state Article V constitutional power:[5] it is merely the act of an executive officer who "in the exercise of his functions is required to pass upon facts and to determine his action by the facts found."[6] This principle remains largely the same today after the Supreme Court articulated it in 1907.[7]

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1 *Texas State Agencies & Departments*, STATE OF TEX., https://www.texas.gov/texas-state-agencies-departments/#:~:text=Over%20150%20state%20agencies%20and,public%20health%20information%2C%20and%20more (last visited Nov. 18, 2023).

2 *Mission Statement and Agency Philosophy*, TEX. COMM'N ON ENV'T QUALITY, https://www.tceq.texas.gov/agency/mission.html (last modified July 24, 2023).

3 *About Us*, TEX. DEP'T OF MOTOR VEHICLES, https://www.txdmv.gov/about-us (last visited Oct. 7, 2023).

4 Missouri, K. & T. Ry. Co. of Tex. v. Shannon, 100 S.W. 138, 141 (Tex. 1907).

5 *Id.*

6 *Id.*

7 James Hannagan, *Judicial Review of an Agency Decision: The Implications of the Texas Supreme Court's Landmark* Mega Child Care, Inc. *Decision*, 7 TEX. TECH ADMIN. L. J. 369, 372–73 (2006).

The Texas Legislature first passed the Texas APA in 1975, although at that time it was called the Administrative Procedure and Texas Register Act.[8] Prior to its enactment, Texas administrative law was based on common law precedents. The Texas APA was meant to set uniform standards for all state agencies.[9] It took decades of effort on behalf of the Texas Bar Association to persuade the legislature to pass such an act and protect specific rights through its passage.[10] The Texas APA set out three specific goals that remain today: "(1) provid[ing] minimum standards of uniform practice and procedure for state agencies; (2) provid[ing] for public participation in the rulemaking process; and (3) restat[ing] the law of judicial review of state agency action."[11]

The Texas APA also provides for judicial review of agency actions in specific circumstances.[12] Judicial review of agency actions is important to maintain proper separation of powers. Proper Article V judicial review keeps agencies squarely within executive (or merely quasi-judicial) functions and maintains the judiciary's "checks" on the executive. Additionally, judicial review ensures due process of the laws and provides an aggrieved party impartial review within the courts.

III. ADMINISTRATIVE ACTIVITIES WITH A RIGHT TO JUDICIAL REVIEW

It is a longstanding principle that the State of Texas and its divisions, including state agencies, enjoy sovereign immunity.[13] "No state can be sued in her own courts

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8 Administrative Procedure and Texas Register Act, 64th Leg., R.S., ch. 61, 1975 Tex. Gen. Laws 136 (current version at TEX. GOV'T CODE ANN. §§ 2001.001–.903).

9 Ron Beal, *The APA and Rulemaking: Lack of Uniformity Within a Uniform System*, 56 BAYLOR L. REV. 1, 1–2 (2004).

10 *Id.* at 2.

11 TEX. GOV'T CODE ANN. § 2001.001 (West 1993).

12 *See* TEX. GOV'T CODE ANN. §§ 2001.171–78, Subchapter G. Contested Cases: Jud. Rev (West 1993).

13 Wichita Falls State Hosp. v. Taylor, 106 S.W.3d 692, 694–95 (Tex. 2003).

without her consent, and then only in the manner indicated by that consent."[14] As noted, Texas executive agencies derive their power from the legislature, and their actions are executive measures taken to further that legislative grant of power.[15] Because an agency decision—even one that is made after a contested case—is not a decision by an Article V constitutional court, agency actions are not necessarily reviewable by (or "appealable" to) an Article V district court. In other words, Texas does not recognize an inherent right to judicial review of agency actions.[16]

In Texas, when a controversy stems from an agency action, a party seeking relief has a right to judicial review in an Article V constitutional court in only three situations: (1) they fit within the Texas APA's contested case provision,[17] (2) they are within a substantive statute that provides judicial review of an agency action,[18] and (3) they impair a vested property right or violate the Constitution.[19]

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14 Hosner v. DeYoung, 1 Tex. 764, 769 (Tex. 1847).
15 Smith v. Hous. Chem. Services, Inc., 872 S.W.2d 252, 254 (Tex. App.—Austin 1994, writ dism'd).
16 Hous. Mun. Emps. Pension Sys. v. Ferrell, 248 S.W.3d 151, 157–58 (Tex. 2007).
17 TEX. GOV'T CODE ANN. § 2001.171 (West 1993).
18 Hannagan, *supra* note 7, at 372; *see also* Fire Dep't of City of Fort Worth v. City of Fort Worth, 217 S.W.2d 664, 666 (Tex. 1949).
19 Cont'l Cas. Ins. Co. v. Functional Restoration Assocs., 19 S.W.3d 393, 397 (Tex. 2000).

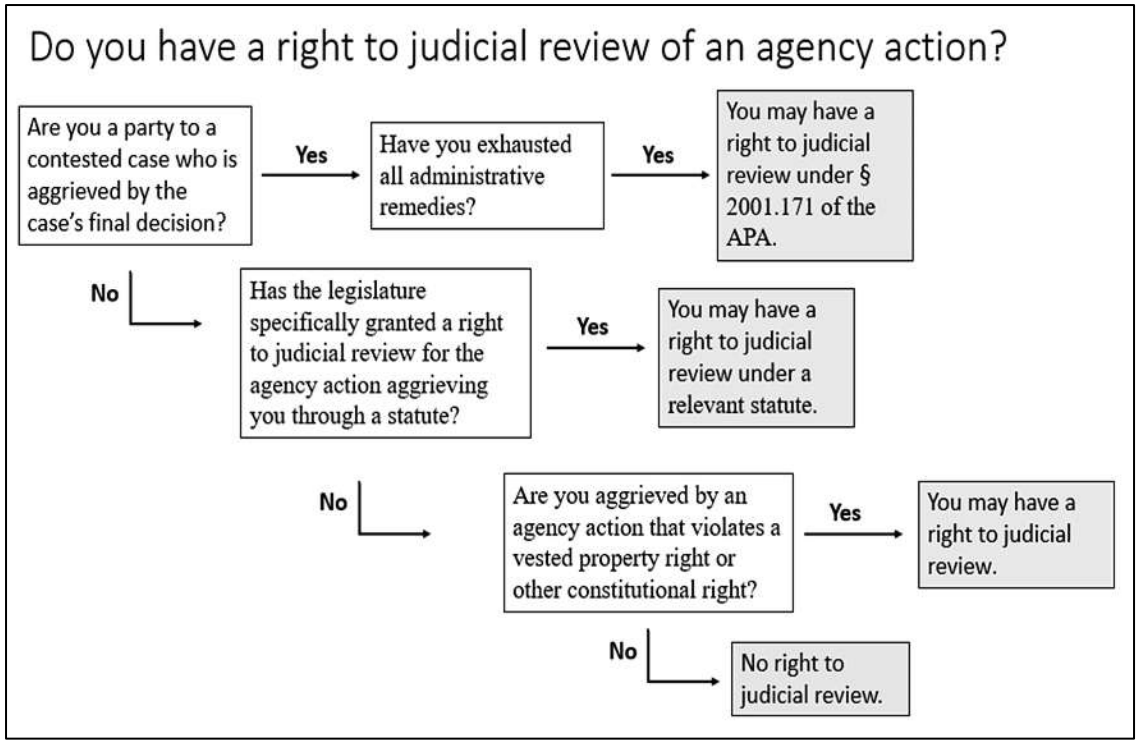

Figure 1: *Visual representation of situations where a party may have a right to judicial review of a particular agency action.*

A. Activities Covered by the Texas APA's Contested Case Provision

If a party has exhausted all administrative remedies and is aggrieved by a final decision to a contested case, then the Texas APA entitles that party to judicial review.[20] For about 25 years, the Texas Courts of Appeals were divided on whether Texas Government Code Section 2001.171 provided this independent right to judicial review after a contested case.[21] The Texas Supreme Court settled the issue in 2004, holding that Section 2001.171 "provides an independent right to judicial review of a contested-case

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20 Tex. Gov't Code § 2001.171.

21 *See* Motorola, Inc. v. Bullock, 586 S.W.2d 706 (Tex. App.—Austin 1979, no writ), abrogated by Tex. Dep't of Protective & Regul. Servs. v. Mega Child Care, Inc., 145 S.W.3d 170 (Tex. 2004) (holding that the APA did not grant a right to judicial review); Tex. Health Facilities Comm'n v. W. Tex. Home Health Agency, 588 S.W.2d 655 (Tex. App.—Waco 1979, no writ) (holding that the APA did grant a right to judicial review); *see also* Hannagan, *supra* note 7, at 375–77.

decision when the agency's enabling statute neither specifically authorizes nor prohibits judicial review of the decision."[22]

Section 2001.171's language unambiguously provides a limited waiver of sovereign immunity.[23] Noting that the statute's plain language may only be disregarded if it would lead to absurd results, the Court firmly grounded its decision in several longstanding rules of statutory interpretation.[24] Additionally, the Court assessed the legislative intent behind the Texas APA by reviewing both the model state administrative procedure acts on which it was based and the history of relevant judicial review.[25]

The Court's decision in *Mega Child Care, Inc.* created a solid foundation for the right to judicial review of a contested case order. But because no inherent right to judicial review of broader agency actions exists, *Mega Child Care* highlighted the importance of determining what counts as a "contested case."

The Texas APA defines a contested case as "a proceeding, including a ratemaking or licensing proceeding, in which the legal rights, duties, or privileges of a party are to be determined by a state agency after an opportunity for adjudicative hearing."[26] This definition leaves open many questions. What types of proceedings, other than licensing and ratemaking, are included? What is included under a legal right, duty, or privilege? What counts as an adjudicative hearing? And what is your right to review if you are denied a contested case hearing?

Many of these questions remain open, but the Court indicated what kinds of

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22 Tex. Dep't of Protective & Regul. Servs. v. Mega Child Care, Inc., 145 S.W.3d 170, 173 (Tex. 2004).
23 *Id.* at 196, 198.
24 *Id.* at 176–77, 196.
25 *Id.* at 177–95.
26 TEX. GOV'T CODE § 2001.003(1).

proceedings fall within this definition when it recently denied a petition for review in *Vazquez v. Health & Human Services Comm'n*.[27] A woman had requested a copy of her Texas birth certificate from the state registrar, but the registrar denied her request.[28] Under the Texas Health and Safety Code, if the registrar refuses to issue a birth certificate, then the registrar must inform the applicant why their request has been refused and provide the applicant with "an opportunity for a hearing."[29] The hearing's purpose is to determine whether the registrar's refusal is supported by evidence.[30] The applicant may request that the hearing be conducted with oral testimony and any additional written information that the applicant wishes to submit.[31] At the hearing, the applicant will have the opportunity to provide oral and written testimony, bring their own witnesses, and question them.[32] In *Vasquez*, after the registrar refused her request, Vazquez requested a hearing and an administrative law judge (ALJ) was assigned as the hearing examiner.[33]

The hearing proceeded and the ALJ determined that the state registrar should not issue a certified copy of Vazquez's birth certificate.[34] The ALJ issued a written order, which included findings of fact and conclusions of law.[35]

Vazquez then sued in district court, seeking judicial review of the order under Section 2001.171 of the Texas APA.[36] The state filed a plea to the jurisdiction and argued

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27 Health & Human Services Comm'n v. Vazquez, 667 S.W.3d 290 (Tex. 2022) (mem. op.) (denying petition for review).
28 Vazquez v. Health & Human Services Comm'n, No. 03-20-00075-CV, 2021 WL 3176031, at *2 (Tex. App.—Austin July 28, 2021), pet. denied, 667 S.W.3d 290 (Tex. 2022) (mem. op.).
29 TEX. HEALTH & SAFETY CODE § 191.057(c).
30 25 TEX. ADMIN. CODE § 181.21(c)(1).
31 *Id.* § 1.53(b).
32 *Id.* § 1.54(a).
33 *Vazquez*, 2021 WL 3176031, at *2.
34 *Id.*
35 *Id.*
36 *Id.*

that the suit was barred because the administrative hearing was not a contested case.[37] Thus, the state argued, the written order was not subject to judicial review under the Texas APA and the state was protected from the suit by sovereign immunity.[38] Vazquez argued that her hearing was a contested case, and thus the Texas APA provided judicial review of the ALJ's decision and waived sovereign immunity, consistent with the *Mega Child Care* decision.[39]

The question on appeal was whether the administrative hearing was a contested case consistent with Section 2001.171 of the Texas APA.[40] The Austin Court of Appeals held that it was.[41] The court determined that "an administrative proceeding can be a contested case when the agency afforded a procedure that meets the 'contested case' definition, despite what the agency's related statutes or rules might otherwise say."[42] The court should consider whether the agency actually provided an adjudicative hearing on the issue, regardless of whether a contested case was statutorily required.[43]

The court held that because Vazquez was entitled to a hearing and the ALJ determined a legal issue based on the record, the Vazquez administrative proceeding was a contested case.[44] The court also noted that the legislature's failure to specifically deem the proceeding as a "contested case" in the statute was not dispositive.[45] The legislature could have included language noting this proceeding as a contested case, just like it could

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37 *Id.* at *4.
38 *Id.*
39 *Id.* at *4.
40 *Id.*
41 *Id.* at *6.
42 *Id.*
43 *Id.*; *see also* Heat Energy Advanced Tech., Inc. v. W. Dallas Coal. for Env't Just., 962 S.W.2d 288, 291 n.1 (Tex. App.—Austin 1998, pet. denied).
44 *Vazquez*, 2021 WL 3176031, at *6–7.
45 *Id.* at *6.

have included language expressly prohibiting judicial review of the decision from the administrative proceeding.[46]

The Texas Supreme Court denied the State's Petition for Review, so the *Vazquez* analysis will apply to future cases when determining whether an administrative proceeding is a contested case under the Texas APA.[47] In response to the Court's denial for review, Justice Boyd dissented and wrote that he would grant review to eliminate uncertainty and "fortify the borders that separate the political branches."[48] Justice Boyd argued that judicial review of agency decisions is a constitutional separation of powers issue, and the *Vazquez* decision creates uncertainty.[49]

B. Substantive Statutes Granting a Right of Review for Agency Action

The legislature may grant a right of judicial review through statutes. However, if the legislature is silent about judicial review, then it is presumed that a right to judicial review does not exist.[50] Before the passage of the Texas APA, the Texas Supreme Court acknowledged this fact and held that, when a particular statute allows review, a person authorized to sue under that statute does not need to show any other justiciable interest to establish standing.[51] The Texas Legislature provides a right to judicial review by "an affected person" in several environmental statutes, including the Texas Clean Air Act

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46 *Id.*
47 *Health & Human Services Comm'n*, 667 S.W.3d at 291.
48 *Id.* (Boyd, J., dissenting).
49 *Id.* at 291, 295 (Boyd, J., dissenting).
50 Hannagan, *supra* note 7, at 373.
51 Scott v. Bd. of Adjustment, 405 S.W.2d 55, 57 (Tex. 1966) (holding that "Since the Legislature has authorized the appeal upon the basis of illegality by any taxpayer . . . and since the plaintiffs here are taxpayers, the courts below erred in dismissing their case.").

(TCAA), Solid Waste Disposal Act (SWDA), and the Texas Water Code (TWC).[52]

The TCAA, which is administered by TCEQ, allows a person who is affected by a TCEQ ruling, order, decision, or other act of the TCEQ or the Executive Director to file a petition in Travis County District Court if no other appeal to TCEQ is provided.[53] The petitioner must file the petition within thirty days after the date of the ruling, order, decision, or action, and the petitioner must serve citation on TCEQ within thirty days after the petition is filed.[54]

The Texas Supreme Court interpreted the TCAA's right to judicial review in *AC Interests, L.P. v. Texas Commission on Environmental Quality*, 543 S.W.3d 703 (Tex. 2018). AC Interests applied to TCEQ for a certification under the TCAA.[55] TCEQ denied AC Interest's application.[56] AC Interests sought judicial review and filed a petition in Travis County District Court pursuant to Tex. Health & Safety Code Section 382.032.[57] However, AC Interests failed to formally serve TCEQ within thirty days after the petition's filing.[58] Instead, AC Interests formally served citation on TCEQ fifty-eight days after filing its petition.[59] Because of the delay in formal service, TCEQ moved to dismiss the case,

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52 *See* TEX. HEALTH & SAFETY CODE ANN. § 382.032(a) ("A person affected by a ruling, order, decision, or other act of the commission or of the executive director, if an appeal to the commission is not provided, may appeal the action by filing a petition in a district court of Travis County."); HEALTH & SAFETY CODE ANN. § 361.321(a) ("A person affected by a ruling, order, decision, or other act of the commission may appeal the action by filing a petition in a district court of Travis County in the time required by Section 5.351, Water Code."); TEX. WATER CODE ANN. § 11.334 ("Any person who is injured by an act of the commission under this subchapter may bring suit against the commission to review the action or to obtain an injunction.").

53 TEX. HEALTH & SAFETY CODE ANN. § 382.032(a).

54 TEX. HEALTH & SAFETY CODE ANN. § 382.032(b), (c); TEX. WATER CODE ANN. § 5.351(b).

55 AC Interests, L.P. v. Texas Commission on Environmental Quality, 543 S.W.3d 703, 705 (Tex. 2018).

56 *Id.*

57 *Id.*

58 *Id.*

59 *Id.*

arguing that AC Interests had not met the procedural requirements of Section 382.032(c).[60]

The Supreme Court disagreed and held that the thirty-day statutory service requirement was not mandatory. To interpret the statute and determine whether the service requirement's timing limitation was mandatory or merely directory, the Court turned to the legislative intent of Section 382.032(c).[61] The Court first looked at whether the statute contained a non-compliance penalty.[62] Noting that the "statutory provision at issue here does not state a consequence and, importantly, no consequence is logically necessary," the Court found in favor of AC Interests.[63]

The Court presumed that "the Legislature intended the requirement to be directory rather than mandatory and that the Legislature did not intend for late service to result in the automatic dismissal of AC Interests' appeal," thus the Legislature expressed no particular consequence for failing to meet the thirty-day service requirement.[64] Ultimately, the Court concluded, even though AC Interests formally served citation on TCEQ after the thirty-day deadline, the petition should not be subject to immediate dismissal.[65]

This holding effectively lessens the burden on petitioners under the TCAA's judicial review provision. Petitioners should not push the boundaries and should plan to comply with the thirty-day requirement, but the precedent set by this case can ease the tension petitioners may feel to properly cross their "t's" and dot their "i's" when seeking judicial review of an agency action.

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60 *Id.* at 705-06.
61 *Id.* at 708.
62 *Id.* at 709.
63 *Id.*
64 *Id.* at 714.
65 *Id.*

In addition to affecting other statutorily granted rights to judicial review, the *AC Interests* holding brings up broader questions as to whether a statutory directive is mandatory or directory in general. The context-specific analysis that the Court performed in *AC Interests* may not apply broadly to statutory interpretation, but litigants have already pushed to determine the bounds of this decision. In *Image API, LLC v. Phillips*, No. 07-21-00015-CV, 2022 WL 839425, at *5 (Tex. App.—Amarillo Mar. 11, 2022, pet. filed) (mem. op.), the Amarillo Court of Appeals—applying the *AC Interests* analysis—held that a statute's time requirements were not mandatory, despite the statute's use of the word "must."[66] The petitioner submitted a petition for review to the Texas Supreme Court, and after receiving an amicus curae brief from members of the Texas Legislature, the Texas Supreme Court requested briefs on the merits from each party.[67] Oral arguments took place November 29, 2023 and the decision is pending as of February 29, 2024.[68] The Texas Supreme Court has a significant opportunity to clarify this space in the future.

C. THE ADMINISTRATIVE DECISION ADVERSELY AFFECTS A VESTED PROPERTY RIGHT OR OTHER CONSTITUTIONAL RIGHT

If an administrative decision adversely affects a vested property right or violates a constitutional right, it is well-settled that a party may be entitled to judicial review.[69]

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66 *See also* TEX. HUM. RES. CODE ANN. § 32.0705(d) (2015) ("An audit required by this section must be completed before the end of the fiscal year immediately following the fiscal year for which the audit is performed.").

67 *Case 22-0308*, TEX. JUD. BRANCH, https://search.txcourts.gov/Case.aspx?cn=22-0308&coa=cossup (last visited Nov. 18, 2023); *see also* Amicus Letter Br. filed on behalf of Members of the Texas Legislature, Image API, L.L.C. v. Cecile Young, Comm'r of the Tex. Health and Human Serv. Comm'n, No. 22-0308, 2022 WL 2070421 ("Amici Curiae strongly encourage . . . this Court . . .to properly interpret the clear-meaning and plain language of current statutes and those read in the future. If need be, we will propose legislation defining 'shall' and 'must' for future interpretation; however, we would hope that such an action would not be necessary[.]").

68 *Case 22-0308*, *supra* note 67.

69 Stone v. Tex. Liquor Control Bd., 417 S.W.2d 385, 385–86 (Tex. 1967) (holding that it is a well settled

Vested property rights are an extension of a constitutional right. Texas The Supreme Court has noted that one fundamental purpose of government is to protect one's right to own property.[70] That right is "fundamental, natural, inherent, inalienable, not derived from the legislature and as preexisting even constitutions."[71] A vested property right must be more than an expectation that is based on anticipated continuance of existing law—that is, no one has a vested right in laws continuing to exist in their current state in a given area.[72] So, if a law changes, no one is deprived of a constitutional right simply because of the change. For a right to become a vested property right, the Supreme Court has found, "it must have become a title, legal or equitable, to the present or future enjoyment of property, or to the present or future enforcement of a demand, or a legal exemption from the demand of another."[73]

One constitutional example of a property right the Court has considered is in the context of regulatory takings and inverse condemnation. In one case, the Court examined whether a constitutionally recognized property interest was impaired by a federal agency's denial of a permit application.[74] Hearts Bluff Game Ranch (Hearts Bluff) purchased approximately 4,000 acres of wetlands that the Texas Water Development Board (TWDB) identified as a potential reservoir.[75] Hearts Bluff bought the land in hopes of creating a

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principle that there is no right to appeal from an administrative order without a statutory provision, a violation of the constitution, or a violation of a vested property right); *see* also Cont'l Cas. Ins. Co. v. Functional Restoration Assoc., 19 S.W.3d 393, 397 (Tex. 2000) (noting this principle is "well recognized" even after the passage of the Texas APA).

70 Eggemeyer v. Eggemeyer, 554 S.W.2d 137, 140 (Tex. 1977).

71 *Id.*

72 Honors Acad., Inc. v. Tex. Educ. Agency, 555 S.W.3d 54 (Tex. 2018) (citing City of Dallas v. Trammell, 101 S.W.2d 1009, 1014 (1937)).

73 Nat'l Carloading Corp. v. Phoenix-El Paso Express, Inc., 176 S.W.2d 564, 570 (Tex. 1943).

74 Hearts Bluff Game Ranch, Inc. v. State, 381 S.W.3d 468, 472 (Tex. 2012).

75 *Id.* at 473–74.

federally-permitted wetland mitigation bank.[76] When Hearts Bluff later applied to the United States Army Corps of Engineers (Corps) for a mitigation bank permit, the Corps denied their application because of the State's previous designation of the site as a potential reservoir.[77]

After receiving the denial from the Corps, Hearts Bluff sued the State of Texas and the TWDB, claiming a regulatory taking under the Texas and United States Constitutions.[78] Hearts Bluff sought $30 to $70 million in damages.[79] In federal court, the United States Court of Appeals for the Federal Circuit held that Hearts Bluff did not have a cognizable property interest in the Corps' discretionary denial of the mitigation bank application.[80] On remand, the Texas Supreme Court noted that property ownership is a fundamental right, and the Court began its analysis under the general regulatory takings jurisprudence.[81]

The Court held that the State did not have authority to deny the permit and that the State's persuasive role in the Corps' denial was not itself a direct restriction on the land, and thus not a taking.[82] Even though direct government action in which the governmental defendant has regulatory authority over the matter that caused the plaintiff's harm may be a taking, in this case, the government actor directly causing the harm was the Corps.[83] The State did not have authority to deny the federal permit.[84] Because the Court found that there

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76 *Id.* at 473.
77 *Id.* at 474.
78 *Id.* at 475.
79 *Id.*
80 *Id.*at 475 (quoting Hearts Bluff Game Ranch, Inc. v. United States, 669 F.3d 1326, 1327 (Fed. Cir. 2012), *cert. denied*, 132 S. Ct. 2780 (2012)).
81 *Id.* at 477.
82 *Id.* at 481 (acknowledging that the TWDB had provided a comment to the Corps asking that the permit be denied since the area was already designated by the State as a potential reservoir).
83 *Id.* at 480.
84 *Id.* at 481.

was insufficient evidence to support a taking, and thus insufficient facts to support a finding of inverse condemnation, it dismissed the suit for lack of jurisdiction.[85]

Hearts Bluff demonstrates one constitutional claim that a party may have against an agency. These claims can be diverse—from regulatory takings to violations of due process. The similarity between them is the importance of a right to judicial review when constitutional provisions are at issue. When a court reviews an agency action without a contested case, like in the constitutional context, the rules governing the standards and procedures of that review are important to ensure a fair proceeding.

IV. THE LAW GOVERNING JUDICIAL REVIEW WHEN THE APA DOES NOT APPLY

Because Texas does not recognize an inherent right to judicial review of agency actions, not all agency actions are subject to judicial review. However, when agency action *is* subject to judicial review, courts must follow the correct procedures and guidelines.

The Texas APA lays out specific procedures and standards for judicial review of agency actions—but it only applies when a party seeks judicial review of an agency action after a contested case.[86] There are two other circumstances in which a party may be entitled to judicial review without having first gone through a contested case: (1) when the right is granted by statute or (2) when the agency action impairs a vested property right or violates a constitutional provision.[87] The Texas APA is silent on standards for judicial review of agency actions in both situations. This gap in the Texas APA leaves potential litigants confused about the correct procedures and applicable standards for their suit.

This section addresses two questions related to judicial review of an agency action

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85 *Id.* at 491.
86 *See* TEX. GOV'T CODE ANN. § 2001.171.
87 *See* ADMINISTRATIVE LAW DIVISION, ADMINISTRATIVE LAW HANDBOOK, 1–3 (2022).

without a contested case. First, it explores the potential applicable standards of review. Second, it discusses the appropriate administrative record for review and when a party may add evidence to the record on review.

A. THE APPLICABLE STANDARD OF REVIEW

Texas courts have acknowledged that the standard of review for agency decisions made without a contested case hearing is muddled.[88] When an agency interprets statutory and regulatory provisions, those interpretations are reviewed *de novo*.[89] But review of evidentiary issues is less clear. If there was no notice, no opportunity to comment, or no opportunity to introduce evidence when the agency made its decision, a party may be entitled to judicial review under the "substantial evidence *de novo*" standard.[90] If review is under the substantial evidence *de novo* standard, instead of relying solely on the administrative record (if there is one), the parties have an opportunity to introduce evidence before the court. The court then decides whether the introduced evidence is substantial and supports the agency's action. Some courts, however, have applied the Texas APA's substantial evidence standard for review of an evidentiary record even where the record was not made pursuant to a contested case.

This section focuses on the applicable standard of review in one context—a petition for judicial review where the right of judicial review was granted by a statute. This analysis focuses on review under the TCAA, Tex. Health & Safety Code Section 382.032. When a party seeks judicial review under the TCAA, the reviewing court must determine whether

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88 Boerne to Bergheim Coal. for Clean Env't v. Tex. Comm'n on Env't Quality, 657 S.W.3d 382, 390 (Tex. App.—El Paso 2022, no pet.).

89 Jaster v. Comet II Const., Inc., 438 S.W.3d 556, 562 (Tex. 2014).

90 *See infra*, Section IV(a)(2) "Substantial Evidence Review of Evidentiary Issues."

the agency's decision is "invalid, arbitrary, or unreasonable."[91] First, this section addresses a court's review of an agency's statutory or regulatory interpretation. This review is settled law and is conducted under the *de novo* standard. Second, this section examines the court's less clear standard of review for review of evidentiary issues under the substantial evidence standard. Third, this section explores an alternative to the substantial evidence standard for evidentiary issues, *de novo* or substantial evidence *de novo* review.

1. *De Novo* Review For Issues of Statutory or Regulatory Interpretation

When courts review issues of statutory or regulatory interpretation, those reviews are held to the *de novo* standard of review and the court must give effect to the legislature's intent.[92] Where a statute or regulation is vague, ambiguous, or there is room for a policy determination, the court will defer to the agency's interpretation, but "this deference to an agency's interpretation is not conclusive or unlimited—we defer only to the extent that the agency's interpretation is reasonable."[93] Administrative rules are construed in the same manner as statutes, and "no deference is due when an agency's interpretation fails to follow the clear, unambiguous language of its own regulations."[94] Whether the agency failed to follow its own rules presents a question of law that is reviewed *de novo*.[95]

In *Citizens Against the Landfill in Hempstead*, a community group (CALH) sought judicial review of the TCEQ's issuance of a Municipal Solid Waste Registration to a

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91 Tex. Health & Safety Code Ann. § 382.032(e).

92 *Jaster*, 438 S.W.3d at 562; Citizens Against the Landfill in Hempstead v. Tex. Comm'n on Env't Quality, No. 3-14-00178-CV, 2016 WL 1566759, at *2 (Tex. App.—Austin Apr. 13, 2016, no pet.).

93 Heritage on the San Gabriel Homeowners Ass'n v. Tex. Comm'n on Env't Quality, 393 S.W.3d 417, 424 (Tex. App.—Austin 2014, pet. denied).

94 *Citizens Against the Landfill*, 2016 WL 1566759, at *2.

95 Phillips Petroleum v. Tex. Comm'n on Env't Quality, 121 S.W. 3d 502, 505 (Tex. App.—Austin 2003, no pet.).

landfill.[96] The TCEQ issued the Registration to the landfill, which authorized the landfill to store and process waste and recycle materials according to Registration provisions.[97] CALH sought judicial review of the issuance under the SWDA, which provides that an affected party may appeal the action by filing a petition in Travis County District Court.[98] CALH argued that TCEQ acted contrary to law by issuing the Registration instead of requiring a permit to operate the landfill.[99] The court noted that TCEQ's authority to issue the Registration turned on the construction of the statute.[100]

Because this was a statutory construction issue—a question of law—the court applied *de novo* review.[101] When construing statutes, the court's primary goal is giving effect to the legislature's intent.[102] The plain meaning is generally the best expression of the legislature's intent.[103] If the statute's language is vague or ambiguous, the court normally defers to the agency's interpretation unless the agency's interpretation is plainly erroneous or inconsistent with the statute's language.[104]

Here, the court considered whether the SWDA and TCEQ's rules pursuant to that statute allowed TCEQ to authorize the landfill via Registration instead of a permit. The court noted that the act governs the management of waste and charges TCEQ with regulating that management.[105] The statute also gives TCEQ broad discretion to implement rules for authorizing municipal solid waste disposal facilities through permitting and

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96 *Citizens Against the Landfill*, 2016 WL 1566759, at *1.
97 *Id.*
98 TEX. HEALTH & SAFETY CODE § 361.321.
99 *Citizens Against the Landfill*, 2016 WL 1566759, at *2.
100 *Id.*
101 *Id.*
102 *Id.*
103 *Id.*
104 *Id.*
105 *Id.* at *3.

registration.[106] Some types of facilities must be authorized by a permit.[107] But the statute says that TCEQ "*may* require and issue permits authorizing and governing the construction, operation, and maintenance of the solid waste facilities used to store, process, or dispose of solid waste under this chapter" (emphasis added).[108] The court found that TCEQ's interpretation of the relevant rules was consistent, and overruled CALH's argument.[109]

2. SUBSTANTIAL EVIDENCE REVIEW OF EVIDENTIARY ISSUES

In contrast to *de novo* review, when a court reviews evidentiary issues, the standard of review in a suit under Texas Government Code Section 382.032 is influenced by whether the challenged decision was made after a contested case. If it was after a contested case, the substantial evidence test of the Texas APA's judicial review provision applies.[110] However, Texas courts have ruled inconsistently on whether the substantial evidence test applies to review of an agency action not developed through the contested case process.

When a substantive statute, such as the TCAA, provides that a court must determine whether an agency's action is "invalid, arbitrary, or unreasonable," courts have found that the statute incorporates the substantial evidence test from the Texas APA.[111] For example, the court found that the Texas APA's substantial evidence test applies under the TCAA in *United Copper Indus., Inc. v. Grissom* and under the SWDA in *Smith v. Houston Chem.*

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106 *Id.*
107 *Id.*
108 TEX. HEALTH & SAFETY CODE § 361.061.
109 *Citizens Against the Landfill*, 2016 WL 1566759, at *6.
110 TEX. GOV'T CODE ANN. § 2001.174; *see also* Gerst v. Nixon, 411 S.W.2d 350, 354 (Tex. 1966) (noting the language discrepancy between the substantial evidence test and substantial evidence rule. "The so-called substantial evidence rule may be more accurately described as a test. . . .").
111 United Copper Indus., Inc. v. Grissom, 17 S.W.3d 797, 801 (Tex. App.—Austin 2000, pet. dism'd) (citation omitted) (noting that the issue of whether an agency action is "invalid, arbitrary, or unreasonable" seems to imply the applicability of the scope of review set forth in the APA).

Services, Inc.[112]

The Texas APA provides guidance for substantial evidence review in a section titled "Review Under Substantial Evidence Rule or Undefined Scope of Review."[113] But this section is within the Texas APA's Subchapter G, which courts have found only to apply after a contested case hearing.[114] The substantial evidence test is similar to a rational basis test in which courts determine whether there is some reasonable basis in the record for the agency action.[115] The Texas APA, in Section 2001.174(2), explains that the court may not substitute its judgment for that of the agency on the weight of the evidence regarding issues committed to agency discretion, but shall reverse or remand if the decision or conclusions are:

> (A) in violation of a constitutional or statutory provision;
> (B) in excess of the agency's statutory authority;
> (C) made through unlawful procedure;
> (D) affected by other error of law;
> (E) not reasonably supported by substantial evidence considering the reliable and probative evidence in the record as a whole; or
> (F) arbitrary or capricious or characterized by abuse of discretion or clearly unwarranted exercise of discretion.[116]

This provision provides for six possible bases of reversal and specifically notes that a court shall reverse or remand an agency action if it violates a constitutional provision.[117]

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[112] *See id.* at 797; Smith v. Houston Chem. Services, Inc., 872 S.W.2d 252, 257 n.2 (Tex. App.—Austin 1994, writ dism'd); TJFA, L.P. v. Tex. Comm'n on Env't Quality, 632 S.W.3d 660 (Tex. App.—Austin 2021, pet. filed); Tex. Comm'n on Env't Quality v. ExxonMobil Corp., 504 S.W.3d 532, 535 n.1 (Tex. App.—Austin 2016, no pet.); Citizens Against the Landfill in Hempstead v. Tex. Comm'n on Env't Quality, No. 03-14-00718-CV, 2016 WL 1566759, at *1 (Tex. App.—Austin 2016, no pet.) (mem. op.).

[113] TEX. GOV'T CODE § 2001.174.

[114] Boerne to Bergheim Coal. for Clean Env't v. Tex. Comm'n on Env't. Quality, 657 S.W.3d 382, 389 (Tex. App.—El Paso 2022, no pet.).

[115] *See* City of El Paso v. Pub. Util. Comm'n of Tex., 883 S.W.2d 179, 185 (Tex. 1994) ("At its core, the substantial evidence rule is a reasonableness test or a rational basis test.").

[116] TEX. GOV'T CODE § 2001.174(2).

[117] *Id.* § 2001.174(2)(A).

Presumably, this provision guides the courts when reviewing an agency action that had a right to judicial review only because the agency violated a constitutional provision. But with the courts' current precedent, this entire section typically does not apply unless the suit was brought after a contested case. Thus, this provision may apply after a contested case where a constitutional violation was at issue, but not when the case is brought for judicial review solely on constitutional grounds.

Further, this section of the Texas APA notes that an agency action shall be reversed or remanded if it is arbitrary or capricious.[118] A decision is arbitrary or capricious or results from an abuse of discretion if the agency "(1) failed to consider a factor the legislature directs it to consider; (2) considers an irrelevant factor; or (3) weighs only relevant factors that the legislature directs it to consider but still reaches a completely unreasonable result."[119] Similar to the constitutional provision above, this arbitrary and capricious test probably does not apply unless the suit was brought after a contested case.

In limited circumstances, courts have applied the substantial evidence test to review of decisions made without the opportunity for a contested case hearing.[120] For instance, courts have applied the substantial evidence test when reviewing TCEQ's denials of contested case hearing requests.[121] Substantial evidence review has also been applied in a review of TCEQ's grant of a standard air quality permit for which there was no opportunity for a contested case and to a suit challenging TCEQ's decision regarding the amount a

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118 *Id.* § 2001.174(2)(F).

119 Sierra Club v. Tex. Comm'n on Env't Quality, 455 S.W.3d 214, 223 (Tex. App.—Austin 2014, pet. denied); *City of El Paso*, 883 S.W.2d at 184.

120 *Boerne*, 657 S.W.3d at 390 ("[T]he Texas Supreme Court has acknowledged the availability of a substantial-evidence review on an administrative record."); *see also* Tex. Comm'n on Env't. Quality v. City of Waco, 413 S.W.3d 409, 424–25 (Tex. 2013) (recognizing that substantial evidence review may be available even without a contested case).

121 *See City of Waco*, 413 S.W.3d at 415; *Sierra Club,* 455 S.W.3d at 223, 235.

municipal utility district could reimburse a developer.[122] This was only appropriate because there was an opportunity for the litigants to develop the administrative record before seeking judicial review.

Each time the court has applied substantial evidence review to a decision made without a contested case hearing, the court found that substantial evidence review was justified because the petitioner had some opportunity to present meaningful evidence or comments to the agency for inclusion in the record before the agency decision was final.[123] Absent an administrative record, "no substantial evidence review is required or even possible."[124] Since substantial evidence review is limited to the administrative record, a full and fair opportunity to develop the record is of "paramount importance."[125] To apply the substantial evidence test without a contested case hearing, the court must find that the parties had an opportunity to develop the record.[126] In fact, without any such opportunity, the agency could act unilaterally and thereby "prevent any meaningful judicial review of its decisions."[127]

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122 *Boerne*, 657 S.W.3d at 389–90; Ranna & Co. v. Tex. Comm'n on Env't Quality, No. 03-16-00724-CV, 2018 WL 2347009, at *2 (Tex. App.—Austin 2018, no pet.).

123 *City of Waco*, 413 S.W.3d at 415 ("Although the City was denied a contested case hearing, it was afforded several opportunities to make a record in the agency . . . There is no indication that the Commission prevented the City from filing any evidence it deemed relevant to the proposed amended permit."); *Ranna*, 2018 WL 2347009, at *3 ("Ranna was not deprived of an opportunity to make a record or to be heard. . . . Much of the record consists of its filings. Further Ranna had an opportunity to be heard on written submission of documents, affidavits, and argument."); *Sierra Club*, 455 S.W.3d at 224 (describing the existence of substantial evidence as "equated with fair and reasonable conduct on the part of the agency" even in the absence of an evidentiary hearing "as long as the hearing requestor was afforded its regulatory rights to express his dissatisfaction with the proposed license and the agency did not refuse to consider the evidence offered in support of that dissatisfaction").

124 Tex. Dep't of Ins. v. State Farm Lloyds, 260 S.W.3d 233, 245 (Tex. App.—Austin 2008, no pet.).

125 Lewis v. Metro. Sav. & Loan Ass'n, 550 S.W.2d 11, 13 (Tex. 1977).

126 City of Waco v. Tex. Comm'n on Env't Quality, 346 S.W.3d 781, 817 (Tex. App.—Austin 2011), *rev'd on other grounds*, 413 S.W.3d 409, 425 (Tex. 2013).

127 *See* Ramirez v. Tex. State Bd. of Med. Exam'rs, 927 S.W.2d 770, 773 (Tex. App.—Austin 1996, no writ).

Under Texas law, a court may review an agency action under the substantial evidence test in specific circumstances, but the standard of review for uncontested cases is not settled law. In *Boerne*, the plaintiff, an environmental group, sought judicial review of the TCEQ's approval of an air quality permit.[128] The permit at issue required only a public hearing, not a contested case hearing.[129] Accordingly, the parties to this suit had not gone through a contested case before seeking judicial review.[130] The environmental group brought suit in Travis County district court under the TCAA.[131] The district court affirmed TCEQ's permit approval, and the environmental group appealed.[132] Before engaging in review of the merits, the El Paso appellate court assessed the proper standard of review.[133]

Even though the Texas Supreme Court acknowledged that substantial evidence review may be available without a contested case, substantial evidence review is not always appropriate.[134] The El Paso court explained that "judicial review of administrative agency decisions is generally governed by the Administrative Procedure Act, which addresses contested-case proceedings and the framework of the substantial-evidence test."[135] The language of the Texas APA makes clear that its judicial review provision only applies in contested cases, rendering the standard of review in uncontested cases unclear.[136] A record that serves as the basis of the agency action is a fundamental requirement of substantial evidence review.[137]

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128 *Boerne*, 657 S.W.3d at 84–85.
129 *Id.* at 390.
130 *Id.*
131 *Id.* at 384–85.
132 *Id.*
133 *Id.* at 388.
134 *Id.* at 390.
135 *Id.* at 389.
136 *Id.*
137 *Id.* at 390.

Ultimately, the court applied substantial evidence review based on the specific facts of this case.[138] Here, the environmental group had an opportunity to contribute to the record at a public hearing—the resulting administrative record was the basis of the agency action.[139] The court found that based on these circumstances, despite not having a contested case, the opportunity to participate satisfied the requirements of the substantial evidence test and allowed for its application.

Although *Boerne*'s recent appellate decision sheds light on an otherwise unclear issue, it is not dispositive. The court notes in *Boerne* that its decision is limited to the facts of that specific case where the party seeking judicial review had an opportunity to contribute to the record at a public hearing.[140] How much participation is required to make substantial evidence review appropriate? Without an opportunity to meaningfully contribute to the record, substantial evidence review is not effective.

3. SUBSTANTIAL EVIDENCE *DE NOVO* OR PURE *DE NOVO* REVIEW FOR EVIDENTIARY ISSUES

If a party does not have any opportunity to develop the record, *de novo* or substantial evidence *de novo* judicial review may be appropriate. Prior to the enactment of Texas' administrative procedures acts, the default standard of review was substantial evidence *de novo*.[141] Under substantial evidence *de novo* review, the trial judge "conducts an evidentiary hearing for the limited purpose of determining 'whether at the time the questioned order was entered there then existed sufficient facts to justify the agency's

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138 *Id.*
139 *Id.*
140 *Id.* at 390.
141 City of Waco v. Tex. Comm'n on Env't Quality, 346 S.W.3d 781, 816–17 (Tex. App.—Austin 2011), *rev'd on other grounds*, 413 S.W.3d 409, 425 (Tex. 2013).

order."[142] The court must determine "whether the evidence introduced before it shows facts in existence at the time of the administrative decision which reasonably support the decision."[143] Thus, in effect, substantial evidence *de novo* review is similar to substantial evidence review but with an opportunity to introduce evidence before the trial court. This would allow a party to introduce evidence to the court if it could show facts supporting or contradicting the agency's action.

When a reviewing court applies pure *de novo* review, the parties introduce evidence as if they were in an original action, and the court weighs the evidence by the preponderance of the evidence standard.[144] Where a court reviews an agency action that is quasi-legislative and involving public policy or policy-making, constitutional separation of powers concerns may be present.[145] Constitutional concerns regarding separation of powers have been raised where a court reviews *de novo* an agency action that is primarily legislative involving public policy or policy making. Those actions are distinguished from agency actions that are quasi-judicial and concern only the parties who are immediately affected.

B. SUPPLEMENTING THE ADMINISTRATIVE RECORD

If the standard of review is *de novo* or substantial evidence *de novo*, parties have an opportunity to introduce additional evidence to the reviewing court. Under these standards, unless provided otherwise by statute, "a court is not confined to the record when reviewing an agency action but may consider evidence properly introduced in court under

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142 Bd. of Trs. of Big Spring Firemen's Relief & Ret. Fund v. Firemen's Pension Comm'r, 808 S.W.2d 608, 612 (Tex. App.—Austin 1991, no writ) (quoting Gerst v. Nixon, 411 S.W.2d 350, 354 (Tex. 1966)).

143 Firemen's & Policemen's Civ. Serv. Comm'n v. Brinkmeyer, 662 S.W.2d 953, 956 (Tex. 1984).

144 2 TEX. JUR. 3d Administrative Law § 217 (2023).

145 *Id.*; Scott v. Tex. State Bd. of Medical Exam'rs, 384 S.W.2d 686, 690 (Tex. 1964).

the general rules of evidence."[146] If, on the other hand, a court determines that substantial evidence review is appropriate, parties would likely need to seek the court's permission to offer additional evidence. The standard for admission of such evidence is unclear.

The Texas APA allows for admission of additional evidence to supplement the record in the following limited circumstance: (1) if the evidence is material and (2) the party can show a good reason why it was not presented at the contested case hearing.[147] But again, this provision of the Texas APA, by its terms, applies only to decisions made pursuant to a contested case hearing.

While Texas courts have been willing to read the Texas APA's standard of review into the TCAA's judicial review provision and some other statutes, at least one court has expressly held that the Texas APA's record-supplementation rules apply only to decisions made pursuant to a contested case hearing.[148] In *Sierra Club v. TCEQ*, the TCEQ denied Sierra Club's request for a contested case hearing and Sierra Club sought judicial review.[149] During the suit, Sierra Club filed a "Motion for Remand to Consider Material New Evidence," which the lower court denied.[150] The Court of Appeals affirmed this denial and noted that Texas APA Subchapter G applies only to judicial review of contested cases.[151] The court went on to say that even if Section 2001.175 did apply, (1) the evidence was not

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146 Murphy v. Rowland, 609 S.W.2d 292, 297 (Tex. App.—Corpus Christi 1980, reh'g denied) ("The decision of the trial court as well as the appellate court is to determine from all the evidence presented in the trial court whether as a matter of law the decision of the Board is supported by substantial evidence. The courts may consider relevant evidence that was available but not introduced at the administrative hearing.").

147 TEX. GOV'T CODE § 2001.175(c). Presumably this good reason test would support introduction of evidence of an allegedly improper ex parte communication.

148 Sierra Club v. Tex. Comm'n on Env't Quality, 455 S.W.3d 214 (Tex. App.—Austin 2014, pet. denied).

149 *Id.* at 220.

150 *Id.* at 220, 226.

151 *Id.* at 227.

material since it probably would not have caused the agency to reach a different conclusion, and (2) there was no good reason for not presenting the evidence to the TCEQ.[152]

While the federal APA does not apply, it may be instructive. Judicial review under the federal APA is not limited solely to contested cases in the same way the Texas APA is limited. The federal APA's Judicial Review provisions are simply "5 U.S. Code Chapter 7 – Judicial Review."[153] Compare this to Texas's Judicial Review provision entitled "Subchapter G. Contested Cases: Judicial Review."[154] The federal APA does not limit judicial review to cases that have already been through a contested case as the Texas APA does. But the Texas APA specifies that the judicial review provision is for contested cases, not necessarily broader appeals for judicial review.

When an administrative decision is challenged pursuant to the federal APA, parties may introduce evidence that was not in the administrative record in two ways.[155] First, a plaintiff may file a "motion to complete" the record if the agency considered materials in the decision-making process that were not included in the administrative record.[156]

Second, a plaintiff can file a "motion to supplement" to bring in materials that were not before the agency during the decision-making process but fit within an exception to the record rule such that the court should consider them.[157] The Fifth Circuit allows such extra-record evidence in three circumstances: (1) the agency deliberately or negligently omitted

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152 *Id.*

153 5 U.S.C.A. §§ 701-06.

154 TEX. GOV'T CODE §§ 2001.171–78 ("Subchapter G. Contested Cases: Judicial Review").

155 Gulf Coast Rod Reel & Gun Club, Inc. v. U.S. Army Corps of Eng'rs, No. 3:13-CV-126, 2015 WL 1883522, *1 n.1 (S.D. Tex. Apr. 20, 2015).

156 SOSS2, Inc. v. U.S. Army Corps of Engineers, 403 F. Supp. 3d 1233, 1237 (M.D. Fla. 2019); Peter C. Alter, *A Record of What: The Proper Scope of an Administrative Record for Informal Agency Action*, 10 UC IRVINE L. REV. 1045, 1057 (2020).

157 *SOSS2, Inc*, 403 F. Supp. 3d at 1237; Alter, *supra* note 156, at 1057.

documents adverse to its decision; (2) the court needed background information to supplement the record and understand the issue; or (3) the record frustrates judicial review and the agency does not explain the administrative action without additional evidence.[158] Courts interpret these circumstances narrowly to keep the focus of judicial review on the administrative record.

The Supreme Court has held that where extra-record evidence is admissible, the proper course of action is to remand the case to the agency for additional investigation or explanation.[159]

V. CONCLUSION

The agencies in Texas regulate broad swaths of society and play a larger role in the everyday lives of Texans than many people realize. Because agency regulations are ubiquitous, clarifying the right to appeal an agency decision in court and the correct standards of that appeal is crucial.

Because there is no presumption of a right to judicial review of agency actions in Texas, the Texas APA's failure to address judicial review in the absence of a contested case has escaped scrutiny for many years. With many statutes seemingly "incorporating" the Texas APA's substantial evidence standard of review, this issue may be partially addressed in some situations where the right to judicial review is created based on a statute that uses specific language. But the murky waters in this space ultimately hurt litigants. In situations where the public has no opportunity to develop the administrative record, agencies may be able to take action that is nearly unchecked by the public, the courts, or

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[158] Medina Cnty. Env't Action Ass'n v. Surfact Transp. Bd., 602 F.3d 687, 706 (5th Cir. 2010) (quoting Am. Wildlands v. Kempthorne, 530 F.3d 991, 1002 (D.C. Cir. 2008)).

[159] Fla. Power & Light Co. v. Lorion, 470 U.S. 729, 744 (1985).

the legislature.

To protect against agency overreach and ensure the right to judicial review is fully intact—including the correct standard of review based on a meaningful record or additional evidence—the legislature should amend the Texas APA's judicial review provision. Initial changes that would address current concerns and clarify a few unclear areas include: specifically noting the circumstances in which a party is entitled to judicial review, even without a contested case; setting an appropriate standard of review based on a party's opportunity to contribute to the administrative record (if one exists); and setting clear standards for supplementing the record when a party did not have a change to meaningfully contribute.

In the absence of legislative action, the Texas Supreme Court may consider granting review of a case addressing these issues in the coming years. As Justice Boyd wrote in his dissent from the *Vazquez* denial of review, clarification is necessary.[160] In addition to constitutional issues such as strengthening the separation between political branches and ensuring proper due process, clarification will reduce strain on the judicial system and agencies by setting standards for litigants who seek judicial review of an agency's action.

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[160] Health & Hum. Servs. Comm'n v. Vazquez, No. 21-0772, 2022 WL 17998211 (Tex. Dec. 30, 2022) (Boyd, J., dissenting).

Insects as Food: Regulatory Barriers to Consuming the Food of the Future

By Eleanor Withers

I. Introduction 176

A. Problems with Current Food Production Practices 178

B. How Insect Farming Could Displace Those Problems 181

C. What an Insect Farm Looks Like 188

II. Current Regulation of Insect Production in the U.S.....189

A. Current Regulation of Insects as Food.....190

B. Current Regulation of Insect Products as Food Additives 194

C. Problems with Current Regulations 198

III. A Regulatory Solution 199

IV. Conclusion 205

I. INTRODUCTION

Imagine sitting down for a tasting menu at a Michelin-starred restaurant. The chef is famous, the scene is beautiful, and you know you're in for a treat. It's likely that your inhibitions are lowered. Maybe you're even ready to try something you normally wouldn't. You have already been dazzled by the first two courses, and the third is on its way out—it's a monkfish aguachile with tomato, avocado, and chicatana crushed tableside.[1] When you delve into the dish, you're wowed. The black spice floods your mouth with an umami flavor; it is pleasantly fatty and smoky, with notes of smoked cacao and nut brittle.[2] Thankfully, after your third drink pairing, you're not afraid to expose your ignorance, so you call back the server to ask again which spice he just crushed tableside. He tells you that it was chicatana, a species of flying leaf-cutter ant. You're not quite sure how to feel—you are definitely surprised, but there's even a part of you that feels tricked. That being said, although *you* may not be used to eating insects, all you have just done is consumed a Oaxacan delicacy, something that is fundamental to their regional salsas and mole.[3] In fact, as someone unfamiliar with eating insects, you may actually be in the cultural minority.[4] It is estimated that insects form a part of at least two billion people's diets, and in the future, that number is only projected to increase.[5]

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1 This dish could be found at the now-closed, formerly Michelin-starred restaurant Punto MX in Madrid. *See Dishes from a Michelin-Starred Insect Tasting Menu*, FINEDINING LOVERS (May 18, 2018), https://www.finediningLovers.com/article/see-dishes-michelin-starred-insect-tasting-menu.

2 *Chicatanas: A Fleeting Delicacy of Ants*, MASIENDA, https://masienda.com/blogs/learn/chicatana-ants (last visited Oct. 10, 2023).

3 *Id.*

4 Sharon Guynup, *For Most People, Eating Bugs Is Only Natural*, NAT'L GEOGRAPHIC (July 14, 2004), https://www.nationalgeographic.com/culture/article/eating-bugs-cultural-cuisine.

5 ARNOLD VAN HUIS ET AL., EDIBLE INSECTS: FUTURE PROSPECTS FOR FOOD AND FEED SECURITY, xiii (2013).

The population continues to grow,[6] the climate continues to change,[7] and our world is already riddled with food insecurity.[8] To accommodate the projected population in 2050, global food production will need to increase by 60%.[9] Naturally, we could increase food production as we know it today, but climate change, land scarcity, and economic considerations would point us in a different, more sustainable direction: insect farming. Insect farming is economically, nutritionally, and environmentally superior to many other methods of food production, including raising livestock for consumption.[10] Yet, the United States (U.S.) has stifled development in the insect farming industry by neglecting to produce a comprehensive regulatory framework that accommodates the practice. Instead, in the U.S., insects are only legally recognized as "filth" in food.[11] As a preface to the overall issue presented by this note—the lack of U.S. regulation on insect production for human consumption—this introduction covers (1) the problems with current methods of food production, (2) the benefits of insect farming, and (3) what an insect farm looks like. Once the importance of a shift to insect farming is established, the addresses and offers a solution to the lack of a capable regulatory framework in the U.S.

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6 *Global Issues: Population*, UNITED NATIONS, https://www.un.org/en/global-issues/population (last visited Nov. 14, 2023).

7 NOAA NAT'L CTRS. FOR ENV'T INFO., ANNUAL 2022 GLOBAL CLIMATE REPORT (2023), https://www.ncei.noaa.gov/access/monitoring/monthly-report/global/202213.

8 Yacob Abrehe Zereyesus & Lila Cardell, *Global Food Insecurity Grows in 2022 Amid Backdrop of Higher Prices, Black Sea Conflict*, USDA ECON. RSCH. SERV. (Nov. 28, 2022), https://www.ers.usda.gov/amber-waves/2022/november/global-food-insecurity-grows-in-2022-amid-backdrop-of-higher-prices-black-sea-conflict.

9 Nikos Alexandratos & Jelle Bruinsma, *World Agriculture Towards 2030/2050: The 2012 Revision* 7 (ESA Working Paper No. 12-03, June 2012), http://www.fao.org/fileadmin/templates/esa/Global_persepctives/world_ag_2030_50_2012_rev.pdf.

10 R.T. GAHUKAR, INSECTS AS SUSTAINABLE FOOD INGREDIENTS: PRODUCTION, PROCESSING AND FOOD APPLICATIONS 85 (Aaron T. Dossey et al. eds., 2016).

11 U.S. FOOD & DRUG ADMIN., FOOD DEFECT LEVELS HANDBOOK (Sept. 7, 2018) https://www.fda.gov/food/ingredients-additives-gras-packaging-guidance-documents-regulatory-information/food-defect-levels-handbook.

A. PROBLEMS WITH CURRENT FOOD PRODUCTION PRACTICES

Considering the increasing global demand for food, it is important to recognize the pitfalls of our current systems of food production. Looking forward, there will be environmental, nutritional, and economic concerns brought about by increases in produce farming and livestock production.[12] Currently, around 30% of all land on Earth is used to raise livestock, but food reserves remain at a 50-year low.[13] As the population continues to grow, land available for farming will become increasingly limited.[14] And with an increased demand for food, relying solely on current methods of food production may be impossible.[15]

There are already environmental problems caused by current methods of food production, which will only be exacerbated by continued population growth. "The food sector accounts for approximately [30%] of the world's total energy consumption and over [20%] of greenhouse gas emissions."[16] Industrial agriculture is heavily reliant on fossil fuels, gasoline, and diesel to run equipment, to produce chemical pesticides and fertilizers, to process food, and to transport food.[17] Burning these types of fuel creates greenhouse gasses (GHGs) that contribute to climate change.[18] Additionally, concentrated animal feeding leads to the release of methane gas, a natural waste from animals but a potent GHG (twenty times more potent than carbon dioxide in terms of its greenhouse effect).[19]

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12 GAHUKAR, *supra* note 10.
13 *Id.*
14 *Id.*
15 *Id.*
16 MARY JANE ANGELO, RESEARCH HANDBOOK ON CLIMATE CHANGE AND AGRICULTURAL LAW 37 (Mary Jane Angelo & Anél Du Plesis eds., 2017).
17 *Id.* at 6–7.
18 *Id.*
19 *Id.*

Clearing land for agricultural development also negatively impacts the environment by releasing carbon into the atmosphere.[20] All of these emissions contribute to global warming, a phenomenon that has negative impacts on human health.[21] The World Health Organization estimated in 2007 that climate change is responsible for 150,000 deaths annually, a number that is set to double by 2030.[22]

Unfortunately, food production and its effect on the environment operate in a negative feedback loop: as food production practices exacerbate climate change, climate change will make food production more difficult.[23] GHG emissions could force 31% of the global food crop and 34% of livestock production out of safe climactic spaces within this century.[24] Climate change will lead to "changes in precipitation, in temperature, in sea level rise, in carbon dioxide levels and in crop disease and pest outbreaks[,]" all of which will result in lower crop yield.[25] Warmer global temperatures will lead to more meat spoilage during transport and to conditions that are more ripe for *Escherichia coli* or *Salmonella* contamination.[26] While, as discussed above, there are already problems *caused* by current methods of food production, in the future, additional problems will have to be *faced* if the U.S. does not change how it produces food.

In addition to contributing to climate change, there are *still* other environmental

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20 *Id.*

21 Paritosh Kasotia, *The Health Effects Of Global Warming: Developing Countries Are The Most Vulnerable*, XLIV UN CHRON., no. 2, 2007, https://www.un.org/en/chronicle/article/health-effects-global-warming-developing-countries-are-most-vulnerable.

22 *Id.*

23 ANGELO, *supra* note 16, at 9–10.

24 Matti Kummu et al., *Climate Change Risks Pushing One-Third of Global Food Production Outside the Safe Climatic Space*, 4 ONE EARTH 720 (2021).

25 ANGELO, *supra* note 16, at 9–10.

26 Neus González et al., *Meat Consumption: Which Are the Current Global Risks? A Review of Recent (2010–2020) Evidences*, 137 FOOD RSCH. INT'L 1, 3 (2020).

problems brought about by current food production. Along with emitting greenhouse gasses, livestock production impacts water usage, water pollution, and water scarcity.[27] The water footprint of meat production can be up to twenty times higher than the water footprint of a crop with the same nutritional value.[28] "To put 1 kg of corn-fed beef steak or hamburger on the table requires 22,000 L water."[29] Using this extreme amount of water has already produced palpable effects: the production of agriculture in the Great Plains is responsible for dewatering the Colorado River and parts of the Wind River, among others.[30] Because fresh water is a finite resource, the amount used in our most common methods of food production is alarming and will only become more problematic as the population grows.

Another environmental problem caused by how we produce our food is the loss of natural biodiversity and habitats.[31] Agricultural overexploitation, which encompasses the shift to larger farm and field sizes and the increasing use of pesticides and fertilizers, has led to the destruction of ecosystems and the extinction of many wild plant and animal species.[32] This loss of biodiversity negatively impacts the "delivery of ecosystem services," including crop pollination, biological pest control, and soil fertility protection.[33] These ecosystem effects will only worsen as farms grow, making it more difficult to feed a growing population.

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27 Sara Farchi et al., *Meat Consumption Reduction in Italian Regions: Health Co-Benefits and Decreases in GHG Emissions*, 12 PLOS ONE 1, 2 (2019).

28 *Id.*

29 F.V. DUNKEL & C. PAYNE, INSECTS AS SUSTAINABLE FOOD INGREDIENTS 10 (Aaron T. Dossey et al. eds., 2016).

30 *Id.* at 6.

31 *See* Flavia Geiger et al., *Persistent Negative Effects of Pesticides on Biodiversity and Biological Control Potential on European Farmland*, 11 BASIC & APPLIED ECOLOGY 97, 97 (2010).

32 *Id.*

33 *Id.* at 98.

In addition to causing environmental problems, current food production methods can lead to human health issues. The consumption of red and processed meats has been associated with increased risk for certain cancers, diabetes, kidney disease, and even a shortened life expectancy.[34] Additionally, there are particular risks associated with the modern practice of "factory farming" meat for human consumption.[35] Factory farming involves raising livestock in densely populated environments, often called "concentrated animal feeding operations."[36] This method elevates the risk of novel disease outbreaks like avian and swine flu because factory-farmed animals have weakened immune systems and are crowded together in spaces with limited airflow.[37] These conditions, combined with the animals' close contact with humans, create a situation that is ripe for viral transmission between humans and animals.[38] Additionally, because factory-farmed animals often have weakened immune systems, it is common practice for said animals to receive constant courses of antibiotics.[39] The overuse of antibiotics can lead to the presence of antibiotic-resistant bacteria, which can be harmful to human health.[40] Humans can be exposed to difficult-to-treat, antibiotic-resistant bacteria through the meat purchased at grocery stores, from animal manure used to fertilize crops, or via transmission from the animals or farm-workers themselves.[41]

B. HOW INSECT FARMING COULD DISPLACE THOSE PROBLEMS

As discussed above, current agricultural and livestock production practices prove

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34 González et al., *supra* note 26, at 3.
35 Jonathan Anomaly, *What's Wrong With Factory Farming?*, 8 PUB. HEALTH ETHICS 246, 246 (2015).
36 *Id.*
37 *Id.*
38 *Id.* at 247.
39 *Id.* at 246.
40 *Id.* at 247.
41 *Id.*

problematic for the environment and for human health, and it is likely that the problems will only get worse as the population continues to grow and the climate continues to change.[42] With these issues as a backdrop, it becomes apparent that alternative methods of food production, like insect farming, should and are likely to become more mainstream in the U.S. In fact, some experts estimate that by 2030, the edible insect market in the U.S. will be worth $9.6 billion.[43]

Insect farming uses fewer resources, has fewer emissions, and requires fewer chemicals than conventional farming methods.[44] In terms of emissions, unlike livestock, some insects do not emit any GHGs, and while others do, the overall rates of GHGs produced by insects are lower per kilogram of meat than conventional livestock.[45] Specifically, "only cockroaches, termites, and scarab beetles emit methane whereas mealworm larvae, crickets, and locusts emit 100 times fewer GHGs and 10 times less ammonia than pigs and beef cattle."[46] In terms of emissions, insect farming is less harmful to the environment than livestock production, and it is also less susceptible to the negative impacts of climate change than agriculture and livestock production. Insects are reared in a closed, indoor environment, so their production will not be impacted by global warming in the same way that some other food production will be affected.[47]

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42 González et al., *supra* note 26, at 3.

43 *$9.6 Billion Edible Insects Markets, 2030: Whole Insect, Insect Powder, Insect Meal, Insect Oil, Crickets, Black Soldier Fly, Mealworms*, BUS. WIRE (June 14, 2022), https://www.businesswire.com/news/home/20220614005656/en/9.6-Billion-Edible-Insects-Markets-2030-Whole-Insect-Insect-Powder-Insect-Meal-Insect-Oil-Crickets-Black-Soldier-Fly-Mealworms.

44 ADINA ALEXANDRA BAICU, ENSURING GLOBAL FOOD SAFETY: EXPLORING GLOBAL HARMONIZATION 168 (Aleksandra Martinović, Sangsuk Oh, & Huub Lelieveld eds., 2nd ed. 2022).

45 GAHUKAR, *supra* note 10, at 95.

46 *Id.*

47 *Id.* at 97 (noting that insects can provide a sustainable, secure food supply, in part, because "insect

Insect production is also less resource-intensive than livestock production.[48] An insect diet is more sustainable than the grain-based diet traditionally used for livestock.[49] Insects can be fed organic waste such as leftover food ("corn stalks; pulp from fruit juicing or wine making operations; expired produce from grocery stores")[50] or byproducts from conventional agriculture, hydroponics operations, and breweries.[51] From there, insect waste itself can be used as organic fertilizer.[52] Also, insects eat less overall, so less feed is needed, and they have better feed conversion ratios than livestock.[53] Feed conversion ratios, which define the efficiency of a feed formulation, represent the weight of the food input divided by the weight of the final product.[54] Insect feed also, unlike livestock feed, does not require additives or medicines to dampen the risks associated with overcrowding.[55] Where overcrowding livestock can lead to animal stress and contamination, overcrowding insects is a natural condition and does not cause negative

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farming can be carried out in available space in urban, periurban, and rural areas" with no special infrastructure required); *see also* Marianne Shockley & Aaron T. Dossey, *Insects for Human Consumption*, *in* Mass Production of Beneficial Organisms: Invertebrates and Entomopathogens 617, 630 (Juan A. Morales-Ramos et. al eds., 2014) ("Insects are much less resource intensive and much more resistant to drought and disease (typically) than cattle and most other vertebrate livestock commonly utilized by humans.").

48 GAHUKAR, *supra* note 10, at 96.

49 *Id.*

50 *Id.* at 92.

51 *Id.*; Niels T. Eriksen et al., *Metabolic Performance of Black Soldier Fly Larvae During Entomoremediation of Brewery Waste*, 147 J. APPLIED ENTOMOLOGY 423, 430 (2023).

52 Press Release, The World Bank, Insect and Hydroponic Farming Could Boost Food Security, Business, and the Circular Economy (Dec. 8, 2021), https://www.worldbank.org/en/news/press-release/2021/12/08/insect-and-hydroponic-farming-could-boost-food-security-business-and-the-circular-economy.

53 Josh Milburn, *Ethics of Meat Alternatives, in* MEAT AND MEAT REPLACEMENTS: AN INTERDISCIPLINARY ASSESSMENT OF CURRENT STATUS AND FUTURE DIRECTIONS 257, 275 (Herbert L. Meiselman & José Manuel Lorenzo eds., 2022).

54 SAJID ALAVI ET AL., SORGHUM AND MILLETS: CHEMISTRY, TECHNOLOGY AND NUTRITIONAL ATTRIBUTES 301 (John R.N. Taylor & Kwaku G. Duodu eds., 2nd ed. 2018).

55 A.T. DOSSEY ET AL., INSECTS AS SUSTAINABLE FOOD INGREDIENTS: PRODUCTION, PROCESSING AND FOOD APPLICATIONS 125 (Aaron T. Dossey et al. eds., 2016).

side effects.[56] Insects naturally live in large groups in small spaces, so the farming conditions do not induce additional stress that requires treatment with antibiotics.[57]

While insects are more sustainable than livestock in terms of their feed requirements, the same is true for their water requirements. For many insects, "water can be easily provided directly in their feed through fresh vegetables and fruits. Others require a small amount of water provided independently from the feed (if their feed itself is a dry feed)."[58] Producing insects for human consumption uses significantly less water than is required to produce livestock and many agricultural products, and insect farms do not cause the same problems with water pollution as conventional farms.[59] This is because insect farming does not require pesticides, as the producer is technically farming the pests themselves.[60]

In addition to requiring less feed and water to be reared, insects also require less land. As mentioned above, the human population continues to grow, and the space available to use as farmland will continue to shrink as global warming proceeds.[61] Insect farming uses far less land than conventional farming methods, and the farms can be placed nearly anywhere since they are generally enclosed, indoor spaces.[62]

Beyond benefiting the environment by using fewer resources and decreasing GHG emissions, consuming insects has many health benefits for humans, including the provision

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56 *Id.*
57 *Id.*
58 *Id.*
59 *See The Sources and Solutions: Agriculture*, U.S. ENV'T PROT. AGENCY (Oct. 28, 2022), https://www.epa.gov/nutrientpollution/sources-and-solutions-agriculture.
60 BAICU, *supra* note 44, at 168.
61 Kummu et al., *supra* note 24.
62 GAHUKAR, *supra* note 10, at 97.

of protein, minerals, vitamins, and omega-3 fatty acids.[63] Protein is critical to the human diet, and "[o]n average, people require about 50 g[rams] of high-quality protein per day."[64] Animal protein, including insect protein, is an efficient way to get a variety of nutrients all in one punch. Animal protein includes essential nutrients like the eight necessary amino acids; vitamin B12; riboflavin; biologically available vitamin A; healthy fatty acids; and several minerals including calcium, iron, and zinc.[65] In terms of the complexity and the overall quantity of nutrients available, it is "broadly accepted that animal-sourced dietary protein [is] superior to that derived from plants."[66] For example, insects generally contain all eight essential amino acids, whereas plants do not.[67] Additionally, insects are richer in protein than beans, legumes, lentils, meat, and fish.[68] To illustrate, per 100 grams of dry weight, crickets have 68.7 grams of protein, whereas ground beef has 27.4 grams of protein and broiled cod fish has 28.5 grams of protein.[69] In terms of legumes, beans have 23.5% the amount of protein as insects, lentils have 26.7%, and soybeans have 41.1%.[70]

But protein is only one part of the human diet. Thankfully, insects also contain other nutrients that are essential to humans. Insects are especially rich in unsaturated fats (the good kind), while being lower in saturated fats (the bad kind) than many other forms of animal protein.[71] Insects are also complete with omega-3 fatty acids, and "many insect species are significantly higher in B vitamins, such as thiamin and riboflavin than whole

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63 BAICU, *supra* note 44, at 168 (citation omitted).
64 J.P. WILLIAMS ET AL., INSECTS AS SUSTAINABLE FOOD INGREDIENTS: PRODUCTION, PROCESSING AND FOOD APPLICATIONS 63 (Aaron T. Dossey et al. eds., 2016) (citation omitted).
65 *Id.* at 63–76.
66 *Id.* at 76.
67 WILLIAMS ET AL., *supra* note 64, at 76.
68 *Id.*
69 *Id.*
70 *Id.*
71 *Id.*

meal bread and hen's eggs."[72] Surprisingly, insects may even be a more bioavailable source of iron than red meat.[73] In addition to nutrient density, insects have the potential to adapt in ways where conventional farming has been stagnant.

Insects and their byproducts have numerous novel uses that will become even more practical as insects become increasingly mass produced. Chitin, the fibrous exoskeleton of insects, can be converted into "Shrilk," a material similar to plastic.[74] Chitin can also be adapted for biomedical use into things like surgical sutures and gauze.[75] Insects also contain antimicrobial peptides that could have a future as antibiotics.[76] Additionally, insects and their byproducts have the potential to be integrated into dual-production systems.[77] For example, the silk from silk moths or worms could be produced into material while the larvae could be eaten as food.[78] Operations of this nature have already been widely adopted in Thailand.[79] A similar setup could be adapted for bees; the honey could be collected and used as food or sweetener, and the bee brood could be collected and sold as food.[80]

An even more novel and timely application of insect production for human consumption is its potential for use as a living source of protein in space.[81] "Insects have long been known to be able to reproduce inside shuttles and enclosed stations in the zero

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72 *Id.* (citation omitted).
73 WILLIAMS ET AL., *supra* note 64, at 76.
74 *Id.*
75 *Id.*
76 *Id.*
77 Gene R. DeFoliart, *An Overview of the Role of Edible Insects in Preserving Biodiversity*, 36 ECOLOGY OF FOOD AND NUTRITION 109, 109 (1997).
78 *Id.*
79 *Id.* at 119, 128.
80 *Id.* at 121–22.
81 DUNKEL & PAYNE, *supra* note 29, at 10–11.

gravity environment of outer space and can serve both as a source of protein and other nutrients and as a tool for recycling materials and producing soil fertilizer."[82] Trials have already been conducted in space-like conditions, and in China, astronauts were able to subsist on mealworm protein for more than one hundred days.[83] Because insects are not yet widely produced, there is untapped potential and opportunity for economic development.

Many of the attributes that make insect farming environmentally sustainable also make insect farming economically sustainable. Insects require less feed than conventional livestock; the feed can be from organic waste; insects can get their water directly from their feed; and because insects require less feed, less water is necessary.[84] Together, these attributes suggest that rearing insects is less expensive than rearing conventional livestock.[85] Additionally, an insect production operation does not have to pay for pesticides or antibiotics. In terms of pesticides, it makes little sense that "a great amount of money is spent every year to save crops that contain no more than 14% of plant protein by killing insects that contain up to 75% of high-quality animal protein."[86] The list of economic efficiencies in insect production goes on: unlike conventional livestock, insects have short life cycles and rapid growth rates, so they can be produced quickly; insects are cold-blooded, so they do not need to burn extra calories to stay warm; and insects are reared inside, so they can be produced year-round.[87]

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[82] *Id.* at 11.
[83] *China: Volunteers Test Worm Diet for Astronauts*, BBC (May 22, 2014), https://www.bbc.com/news/blogs-news-from-elsewhere-27515900.
[84] GAHUKAR, *supra* note 10, at 91–92.
[85] *Id.*
[86] *Id.* at 93 (citation omitted).
[87] *Id.* at 91.

C. WHAT AN INSECT FARM LOOKS LIKE

There are a variety of farmable and consumable insects, but some of the most common include crickets, mealworms, and black soldier fly larvae. In this section, I will focus on describing how crickets are produced for human consumption since they are one of the more common and widely known insect-foods in the U.S. One of the first and only cricket farms in the U.S. was built by Aspire Food Group in Austin, Texas, in 2015.[88] The 13,000 square-foot facility is stacked with cardboard boxes, which are filled with egg cartons, plastic sheets, and crickets.[89] When it comes time for the crickets to breed, the cricket rearers only have to place some soil into the cartons, and the crickets do the rest.[90] Once the the eggs are laid, the rearers remove them from the soil for their incubation period.[91] While each female cricket produces between 100 and 200 eggs, the farmers only incubate as many as they have space to rear into adults.[92] While the eggs are incubating, the adult crickets continue their six-week lifecycle.[93] Near the end of their natural life, the rearers harvest the crickets, which is no more complex than placing them into Ziploc bags, which then go into an industrial freezer.[94] The cold induces the crickets into a sleep-like state until they die and eventually freeze solid.[95] From there, the crickets can be churned into a powder or sold in their entirety to other producers of cricket products.[96] In 2017,

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88 *See* ASPIRE FOOD GROUP, https://aspirefg.com/ (last visited Oct. 13, 2023).
89 Phil McCausland, *How to Breed a Tasty Cricket*, THE ATLANTIC (Sept. 24, 2015), https://www.theatlantic.com/health/archive/2015/09/americas-cricket-farmers/406843/.
90 *Id.*
91 *Id.*
92 *Id.*
93 *Id.*
94 *Id.*
95 ASPIRE FOOD GROUP, *supra* note 88.
96 *Id.*

Aspire Food Group built another Austin, Texas cricket farm that was fully automated.[97]

For an American palate, consuming insects has yet to gain traction. But the truth is, whether we like it or not, Americans already eat insects. "As much as 80% of the [global] population eats insects intentionally and 100% unintentionally . . . ."[98] Still, whether it be out of eventual necessity or a shift towards environmental conscientiousness, the time will come when more Americans will be eating insects regularly and by choice. The FDA should facilitate that transition through early regulation and should protect the public by regulating preemptively rather than in response to an issue. The rest of this paper focuses on the U.S.' regulatory problem. It addresses (1) the current regulatory state of insect farming in the United States and why it is problematic and (2) a potential regulatory solution that will accommodate insect farming and solve the current problems with its regulation.

II. CURRENT REGULATION OF INSECT PRODUCTION IN THE U.S.

Although this section is titled "Current Regulation of Insect Production in the United States," it would more aptly be titled "*The Lack* of Current Regulations for Insect Production in the United States." As one author puts it, "[c]lear federal rules on insect food are missing in the United States of America. However, edible insects are on the market despite the legal uncertainty."[99] At best, this sounds like a science experiment. At worst, it sounds life-threatening. If the FDA were to directly regulate insects as food, it would provide better protection for the American public. Maybe even more importantly, it would help to change the public perception of insects as food—a change that will be beneficial in

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97 *Id.*
98 WILLIAMS ET AL., supra note 64, at 61 (citation omitted).
99 BAICU, *supra* note 44, at 170.

the long run as conventional food sources become scarcer. This section discusses (1) current regulations as they apply to insects as food, (2) current regulations as they apply to insects as food additives (like insect protein powder), and (3) the problems with current regulations.

A. CURRENT REGULATION OF INSECTS AS FOOD

As the law stands now, the only references to insects are as "filth" or "pests."[100] Food is defined broadly under the Federal Food, Drug, and Cosmetic Act (FDCA) as "(1) articles used for food or drink for man or other animals, (2) chewing gum, and (3) articles used for components of any such article."[101] The definition is broad enough that insects fit within it. But under the FDCA, "[t]he introduction or delivery for introduction into interstate commerce of any food . . . that is adulterated" is prohibited.[102] A food is adulterated "if it consists in whole or in part of any filthy, putrid, or decomposed substance, or if it is otherwise unfit for food."[103] Another way a food can be adulterated is "if it has been prepared, packed, or held under insanitary conditions whereby it may have become contaminated with filth, or whereby it may have been rendered injurious to health."[104] Federally, insects are filth.[105]

The FDA's Food Defect Action Booklet spells this out by listing acceptable levels of unavoidable defects, including "insect filth."[106] But while there are technically

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100 *See* 21 U.S.C. §§ 321–350.
101 *Id.* § 321(f).
102 *Id.* § 331(a).
103 *Id.* § 342(a)(3).
104 *Id.* § 342(a)(4).
105 Marie C. Boyd, *Cricket Soup: A Critical Examination of the Regulation of Insects as Food*, 36 YALE L. & POL'Y REV. 17, 17 (2017); U.S. FOOD & DRUG ADMIN., FOOD DEFECT LEVELS HANDBOOK, *supra* note 11.
106 FOOD DEFECT LEVELS HANDBOOK, *supra* note 11; 21 C.F.R. § 110.110 (2023).

acceptable levels of insect filth (defect action levels), the FDA's regulations make it clear that:

> Compliance with defect action levels does not excuse violation of the requirement in section 402(a)(4) of the act that food not be prepared, packed, or held under unsanitary conditions or the requirements in this part that food manufacturers, distributors, and holders shall observe current good manufacturing practice. Evidence indicating that such a violation exists causes the food to be adulterated within the meaning of the act, even though the amounts of natural or unavoidable defects are lower than the currently established defect action levels.[107]

In other words, despite being technically acceptable, even just a small amount of insect presence makes food adulterated. Defect action levels represent the levels at which the FDA will take action against a manufacturer, so anything below a default action level is technically acceptable.[108] For example, shelled peanuts are on the higher end of allowable insects—the FDA will not take action unless there is an "[a]verage of 20 or more whole insects or equivalent in 100-pound bag siftings."[109] In ground pepper, the FDA will not take action unless there is an "[a]verage of 475 or more insect fragments per 50 grams."[110] The FDA defines defect action levels related to insect filth in around fifty different foods.[111]

In addition to producing food that is unadulterated (or at least food that falls below a default action level), food producers must follow Current Good Manufacturing Practices.[112] Current Good Manufacturing Practices are standards that attempt to ensure the safety of food by prescribing "appropriate personal hygienic practices, design and

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107 21 C.F.R. § 110.110(c) (2023).
108 FOOD DEFECT LEVELS HANDBOOK, *supra* note 11.
109 *Id.*
110 *Id.*
111 *Id.*
112 U.S. FOOD & DRUG ADMIN., CURRENT GOOD MANUFACTURING PRACTICES (CGMPS) FOR FOOD AND DIETARY SUPPLEMENTS (Jan. 31, 2020), https://www.fda.gov/food/guidance-regulation-food-and-dietary-supplements/current-good-manufacturing-practices-cgmps-food-and-dietary-supplements.

construction of a food plant and maintenance of plant grounds, plant equipment, sanitary operations, facility sanitation, and production and process controls during the production of food."[113] A key tenet of good manufacturing practice is the prevention and treatment of pests. The current FDA regulations reference insects as pests.[114] Throughout the FDA's regulations, pests include "any objectionable animals or insects including birds, rodents, flies, and larvae."[115]

To protect against food contamination, a food manufacturing plant *must* protect against pests by "[p]roperly storing equipment, removing litter and waste, and cutting weeds or grass . . . that may constitute an attractant, breeding place, or harborage for pests."[116] This seems contrary to the entire function of an insect farm, which centers around breeding insects for consumption. The rules go on to make even more explicit the war against pests. In a section titled "pest control," the regulations state that "[p]ests must not be allowed in any area of a food plant. Guard, guide, or pest-detecting dogs may be allowed in some areas of a plant if the presence of the dogs is unlikely to result in contamination of food."[117] Essentially, this rule bans all pests, but it makes an exception for dogs.[118] The exception, however, applies only to "[g]uard, guide, or pest-detecting dogs."[119] Overall, the avoidance of pests is mentioned fifteen times throughout the Current Good Manufacturing Practice provisions.[120] This backdrop, especially in an emerging market, does the opposite of encouraging producers to pursue insect farming.

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113 *Id.*
114 *See* 21 C.F.R. § 117.3 (2023).
115 *Id.*
116 *Id.* § 117.20(a)(1).
117 *Id.* § 117.35(c).
118 *Id.*
119 *Id.*
120 *See id.* §§ 117.10–117.110.

Although the FDA is explicit in its admonishment against pests, the FDA is *not* explicit in defining what is considered a pest. Under the current definition of pest, only "objectionable" insects are included.[121] Although it could well be argued that insects intended for human consumption are not objectionable, it could also be argued that any insect, *especially* one to eat, is objectionable—an argument that a majority of Western culture would agree with.[122] That being said, the FDA has implicitly and informally recognized that insects intended for human consumption do not fall under the definition of pest in its regulations.[123] But the key words there are implicit and informal—for the sake of producers, consumers, and society at large, the FDA should explicitly and formally recognize the viability of insects for human consumption.

The only recognition the FDA has given to insect farming as a practice has been informal, and it has come in the way of a standard, form response to inquiries regarding insects as food. The response does not have force of law. It states:

> Under the Act as amended, bugs/insects are considered food if that is the intended use (Sec. 201(f)). Food must be clean and wholesome (i.e. free from filth, pathogens, toxins), must have been produced, packaged, stored and transported under sanitary conditions, and must be properly labeled (Sec.403). The label should include the scientific name of the insect. Insects must be raised specifically for human food following current good manufacturing practices (cGMP). Insects raised for animal or pet food cannot be diverted to human food. They cannot be "wildcrafted" (collected in the wild) and sold as food due to the potential of carrying diseases or pesticides. The manufacturer also needs to demonstrate the "wholesomeness" of the product. There is a growing body of scientific literature that people who are allergic to shrimp, clams, etc. may also be allergic to insects either as food or as adulterants in foods.[124]

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121 *See, e.g.*, *id.* § 117.3.

122 VAN HUIS ET AL., *supra* note 5, at 35 (detailing the "disgust" surrounding eating insects in Western cultures).

123 U.S. DEP'T OF AGRIC., SETTING THE TABLE FOR A HOTTER, FLATTER, MORE CROWDED EARTH: INSECTS ON THE MENU? (2015), https://www.nifa.usda.gov/sites/default/files/wageningen_insectsasfood_05142014.pdf.

124 *Id.* at 13.

Although this is informative, it is not law; rather, it is the FDA's interpretation of law. Specifically, it is an informal recognition that was neither published on the FDA's website nor disseminated to a mass audience. This flimsy recognition has little force when weighed against the overwhelming references to insects as "pests" and "filth" in the actual law. "The acceptance or rejection of entomophagy [the study of insects] is a question of culture."[125] And rather than being silent on the issue, the FDA should formally recognize the practice.

B. Current Regulation of Insect Products as Food Additives

Under the FDA's regulatory framework, food additives are regulated differently than food itself. A food additive is defined as "a substance . . . the intended use of which results or may reasonably be expected to result, directly or indirectly, either in their becoming a component of food or otherwise affecting the characteristics of food."[126] Things like insect protein powder would fall under this definition. Food additives are presumptively deemed to be unsafe and must be approved by the FDA, unless they fall under an exception, including being generally recognized as safe (GRAS).[127] Currently, there has been no determination that insect protein is GRAS. Color additives are also regulated differently than food itself and are required to be certified for use in food.[128] Certain common and safe color additives are exempt from certification, one of which, cochineal extract, is derived from beetles.[129]

It is likely that insect protein is GRAS. There are two ways a food additive can

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125 VAN HUIS ET AL., *supra* note 5, at 36.
126 21 C.F.R. § 170.3(e)(1) (2023).
127 21 U.S.C. § 348(a) (2023).
128 21 C.F.R. § 70.10 (2023).
129 *Id.* § 73.100(e).

qualify as GRAS: if it is recognized as such by a qualified scientific expert or based on common usage.[130] Insect protein may be able to pass either test, but the easier test to pass would be the common usage test, as the scientific test is extremely stringent. An additive "used in food prior to January 1, 1958, may be generally recognized as safe through experience based on its common use in food."[131] If the common use occurred outside of the U.S., it must "be documented by published or other information and shall be corroborated by information from a second, independent source that confirms the history and circumstances of use of the substance."[132] Manufacturers can make self-determinations of GRAS status, and should (but are not required to) provide notice to the FDA through their GRAS reporting system.[133] The FDA publishes these notices online, but there are no filings associated with insect protein to date.[134] Because insects have been consumed worldwide for centuries, a manufacturer could likely make a sufficient showing for GRAS status. Either way, GRAS notices do not end in a legally binding determination from the FDA, so the process may not have any impact on consumer awareness and acceptance of insects as food.[135]

Technically, an insect-derived color additive is already approved by the FDA, cochineal extract, but it also likely does not have an impact on consumer acceptance of insects as food because most people do not know what it is. Cochineal extract is one of a number of food colorings that must be specifically labeled on any food in which it is

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130 *Id.* § 170.30.
131 *Id.* § 170.30(c)(2).
132 *Id.*
133 *Id.* § 170.30(i).
134 *GRAS Notices*, U.S. FOOD & DRUG ADMIN., https://www.cfsanappsexternal.fda.gov/scripts/fdcc/?set=GRASNotices (last updated Oct. 12, 2023).
135 Boyd, *supra* note 105, at 64.

used.[136] This is because there is a subset of people that have a severe allergic reaction to cochineal extract—an allergic reaction that is common in people that are allergic to shellfish and a reaction that is likely to occur with insect products other than cochineal extract.[137] Because the FDA requires cochineal extract to be labeled, people who are allergic to it likely understand themselves to be allergic to "cochineal extract."[138] But because cochineal extract does not sound like an insect derivative on its face, people who are allergic to it may not be able to use the information of their allergy to protect themselves from reactions to other foods that contain insects.

Just as the FDA has informally recognized insects as food, it has also informally recognized insect proteins as food additives.[139] The FDA has said that insect proteins are:

> Subject to regulation like any other food ingredient, which means that the protein is a food additive unless the use of the substance is GRAS. . . . To be considered GRAS, the substance would have to meet the GRAS criteria in 21 CFR [§] 170.30. A company can make a GRAS determination independent of FDA. However, self GRAS determination can be challenged by FDA if it disagrees. Company can voluntarily submit a GRAS notice of their claim to FDA for review. If the substance is a food additive, it would be considered unsafe under section 409 of the FD&C Act since there is no food additive regulation authorizing insect derived protein in food. Company interested in seeking a food additive regulation for the substance, they should submit a food additive petition that follows the format in 21 CFR [§] 171.1.[140]

Again, this recognition is informative, but it is not formally published or widely

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136 21 C.F.R. § 73.100(d)(2) (2023).

137 Boyd, *supra* note 105, at 47–48.

138 Listing of Color Additives Exempt from Certification; Food, Drug, and Cosmetic Labeling: Cochineal Extract and Carmine Declaration, 74 Fed. Reg. 207, 208 (Jan. 5, 2009).

139 *Insects for Food Use is Permitted by Enforcement Discretion in U.S.*, THE FUTURE OF EDIBLE INSECTS, (Oct. 28, 2020), https://thefutureofedibleinsects.com/category/regulations/; *see also* Letter from Dep't of Health & Human Serv., to Andrew Brentano (July 3, 2013) https://thefutureofedibleinsects.files.wordpress.com/2015/07/fda-edible-insect-response-regulation.jpg.

140 SETTING THE TABLE FOR A HOTTER, FLATTER, MORE CROWDED EARTH: ARE INSECTS ON THE MENU?, *supra* note 123, at 14.

disseminated. Because insect protein is not recognized as an acceptable food product in the eyes of the law, consumers are again left in the dark and are not guaranteed the safety of the food they are consuming.

Until a food manufacturer takes initiative to file a food additive petition or a notice of GRAS status, there will be no formal recognition of insects as food additives unless the FDA takes it upon itself to propose a regulation recognizing insect proteins as food additives. In addition to stifling the market as described in the prior section, the FDA's lack of recognition is actively endangering consumers. For example, the FDA decided not to require that labels mention the insect origin of cochineal extract, stating that "[t]he origins of cochineal extract and carmine are clearly described in the color additive regulations" and "[i]f consumers desire to avoid products containing these color additives, they will be able to identify such products by reading the ingredient list."[141] This response demonstrates not only a disconnect with the average consumer but also an affirmative avoidance of recognizing insects as food. This stance strips consumers of the ability to identify allergens. If products containing cochineal were labeled as, for example, "cochineal extract (derived from insects)," consumers with allergies would be able to extrapolate the knowledge to protect themselves from potential allergens in all types of insect and insect-derived foods. Again, like with insects as food, the avoidance stance regarding insect protein as a food additive is problematic from a cultural perspective because it denies the opportunity to normalize insects as food.[142]

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[141] Boyd, *supra* note 105, at 48.
[142] *Id.*

C. PROBLEMS WITH CURRENT REGULATIONS

The weight of the problem with the current regulations is the *lack* of regulation, more specifically, that the FDA has yet to affirmatively recognize insects as food under law. This is problematic because law informs culture and because regulatory uncertainty is bad for business and for consumers.[143] A large part of this paper was dedicated to demonstrating the benefits of insect consumption and to showing that, whether or not we like the sound of it, there is a good chance that insect farming and consumption will continue to gain popularity, even if it be out of necessity.[144] With that in mind, it is important for the law to encourage and accommodate the practice.

"[C]oncepts become more culturally powerful after being institutionalized in law."[145] In fact, there is an entire body of academic literature related to exploring the phenomenon.[146] As the current formal FDA regulations stand (only recognizing insects as "pests" and "filth"), they encourage adherence to our current Western culture of viewing insects with disgust.[147] This is problematic because, as aforementioned, we may need to learn to be okay with eating insects considering the way climate is changing and the population is growing. The current lack of FDA regulation does not encourage or accommodate this reality. Additionally, "absence of specific regulation . . . constitutes a structural barrier to more widespread production and sale of edible insects."[148] The

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143 *See* Abigail C. Saguy & Forrest Stuart, *Culture and Law: Beyond a Paradigm of Cause and Effect*, 619 THE ANNALS OF THE AM. ACAD. OF POL. & SOC. SCI. 149, 153; Christl Li et al., *What's Eating North America's Edible Insect Industry? An Examination of Psychological, Cultural and Regulatory Barriers*, 37 RENEWABLE AGRIC. & FOOD SYS. 1, 1–4 (2022).

144 *See* discussion *supra* INTRODUCTION.

145 Saguy & Stuart, supra note 143, at 153.

146 *Id.*

147 VAN HUIS ET AL., *supra* note 5, at 35.

148 Li et al., *supra* note 143, at 1.

regulatory uncertainty discourages investment into the industry, which is again problematic considering the viability of insects as a food source. Consumers are also hurt by the lack of FDA regulation; there are not tailored procedures in place to produce insects, which may negatively impact the safety of the food. But even if the food is safe, its under-regulation may still negatively impact consumers who feel regulation is needed to be assured of the food's safety.

Critics may argue that insects never stand a chance at gaining acceptance in Western culture but I urge these critics to remember the story of the lobster, a food once reserved only for servants and prisoners but now a delicacy.[149] "Culture, not taste, often defines what's edible," and since law informs culture, the FDA should use its power to guide culture towards eating insects.[150] A formal recognition would inform consumers that insects are food, and it would provide assurance to consumers that the insects are safely produced. Additionally, formal recognition would dampen the current regulatory uncertainty that disincentivizes investment into the industry. With clear laws, insect manufacturers would be enabled to better explore the market, which would lead to more exposure for consumers. This recognition of and exposure to insects as food would ease consumers towards acceptance, which will better serve our society in the long run as conventional food sources may become harder to come by.

III. A REGULATORY SOLUTION

The regulatory solution I offer is relatively simple and feasible: smooth out inconsistencies in the law and give formal legal recognition to insects as a viable food

[149] The Learning Network, *Film Club: 'The Joy of Cooking (Insects)'*, THE N.Y. TIMES (Mar. 28, 2022), https://www.nytimes.com/2022/02/17/learning/film-club-the-joy-of-cooking-insects.html.
[150] *Id.*

source. To be a comprehensive solution, it will require affirmative action on the part of the FDA, and it will require changes to various parts and sections of existing regulation. The solution includes (1) changing definitions; (2) providing carve outs for insects as food; (3) distinguishing between different types of insects; (4) adding affirmative, insect-specific procedures through the creation of new regulations; and (5) changing labeling requirements. While it sounds like a lot, the FDA has legal authority through various provisions in the U.S. Code to regulate food in the ways that I will describe.

The FDA should change the definition of pest in the applicable sections containing Current Good Manufacturing Practices (Title 21, Chapter 1, Subchapter B, Part 110 and Part 117 of the Code of Federal Regulations). Currently, pest is defined as "any objectionable animals or insects including, but not limited to, birds, rodents, flies, and larvae" and "any objectionable animals or insects including birds, rodents, flies, and larvae."[151] Accommodating insects reared for human consumption would only require a minor change. For example, appending the phrase "unless they are intended for human consumption" onto the end of the current definitions would fix the problem. Alternatively, a second sentence could be added to the definitions that states something like: "An insect intended and produced for human consumption is not objectionable." By making it clear that insects intended for human consumption are not pests, consumers would likely be less weary of the prospect of consuming them. The change would also remove the uncertainty and potential for argument over whether insects produced for human consumption are "objectionable." With a minor definition change, insect producers would be enabled to produce their products without fear of violating unclear regulations.

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[151] 21 C.F.R. §§ 110.3(j), 117.3 (2023).

For good measure, the FDA could adjust its Current Good Manufacturing Practice regulations to provide carveouts for edible insects. Although a change in the definition of "pest" would make this proposed change unnecessary, if the FDA did not want to fully change the definition of "pest," it could carve out non-pest insects as it did with non-pest dogs. While currently the regulations state that "[p]ests must not be allowed in any area of a food plant,"[152] the FDA could add a sentence that states, "Insects that are the subject of production for human consumption may be allowed in the plant." This exception would make clear that even if insects are the food product, other insects or bugs are still pests and should not be found in the production facility.

With the Current Good Manufacturing Practice regulations settled, the next area to address would be the references to insects as "filth." In their "Food Defect Level Handbook," the FDA refers to maximum levels of insect parts that are allowed in various products before the FDA would take legal action to address them.[153] In this regard, the FDA refers to the insect parts as "insect filth."[154] Referring to insects as filth is problematic because legally, if a product contains filth, it is adulterated and prohibited from entering commerce.[155] By referring to insects as filth, the FDA reinforces the status of insects as an adulterant, which may not always be the case. This is perhaps a mostly cosmetic change, but the FDA should change the label in its "Food Defect Level Handbook" and elsewhere throughout its code from "insect filth" to something like "unintended insects." This would break the connection between insects as illegal filth and would clarify that the maximum

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152 *Id.* § 117.35(c).
153 FOOD DEFECT LEVELS HANDBOOK, *supra* note 11.
154 *Id.*
155 21 U.S.C. § 342(a) (2023).

levels only apply to unintended insects. This change would be a culturally beneficial step toward normalizing insects as food.

The FDA also has the legal authority to regulate specific foods, as can be seen in, for example, 21 C.F.R. Part 152, which solely regulates frozen cherry pies, and 21 C.F.R. Part 120, which imposes Hazard Analysis and Critical Control Point (HACCP) Systems solely for fruit juice.[156] Frankly, if frozen cherry pie has an entire part of the C.F.R. dedicated to it, insects should as well. In certain cases, like the cherry pie rule, the FDA uses its legal authority to address problems occurring in specific industries. If frozen cherry pies do not have enough cherries, the FDA can write a rule requiring them to have more cherries.[157] Rather than responding retroactively to a problem in the insect production industry, the FDA should regulate early to avoid future problems. Although it is very unlikely for insects to carry diseases that pose risks to human health, it is thought that they do have the capacity to harbor foodborne illnesses like *Salmonella*, *Listeria*, and *E. coli*.[158] With this in mind, especially since the mass production of insects for human consumption is such a new industry that is different from any before, the FDA should jump on the opportunity to regulate the novel industry early on in its lifespan. This could be in the form of a specific Part, like the ones dedicated to cherry pie, fish and fishery products, milk and cream, etc., or in the form of establishing industry-specific HACCP procedures, as it did with juice. The Food and Agriculture Organization of the United Nations supports this proposition, going so far as to say that "the adoption of HACCP throughout the insect supply chain will be a determining factor in the success and development of the edible

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156 21 C.F.R. §§ 152.126, 120.1 (2023).
157 *Id.* § 152.126(b)(1)(i).
158 VAN HUIS ET AL., *supra* note 5, at 120.

insect sector."[159]

An additional change that would benefit the culture of insect consumption in the U.S. and the safety of its consumers would be a requirement that insect-based foods have a label stating that the product contains insects. As referenced above, the FDA has demonstrated a reluctance to directly label insect-based products as such possibly out of fear for what consumers may think. While there may be an initial shock factor when seeing an insect label on a food product, in the long run, labeling insects in food will have the effect of normalizing the product.[160] Normalizing insect consumption will have long term environmental, nutritional, and economic benefit.[161] In terms of writing this requirement into the law, there are multiple avenues.

Currently, insects that are ingredients in food are required to be labeled under their "common or usual name," which, according to the FDA, is their scientific name.[162] Personally, I do not know many people who would know that *Acheta domestica* is cricket, or that *Tenebrio molitor* is mealworm, or that *Hermetia illucens* is black soldier fly larvae. To solve this problem and to make insect ingredients more consumer friendly, the FDA could add insects as an exception under 21 C.F.R. 101.4(b).[163] The FDA has already created other exceptions similar to this—for example, "[b]utteroil and anhydrous butterfat may be declared as 'butterfat'."[164] Following that model, the FDA could make exceptions for each insect by specifying that, for example, "*Acheta domestica* may be declared as

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159 *Id.* at 117.
160 Boyd, *supra* note 105, at 80.
161 *See* discussion s*upra* INTRODUCTION.
162 21 C.F.R. § 101.4(a)(1) (2023).
163 21 C.F.R. § 101.4(b).
164 21 C.F.R. § 101.4(b)(9).

'cricket'." Or, in a list format, the FDA could say something like "*Acheta domestica*, *Tenebrio molitor*, etc. may be declared as 'insect.'" A pitfall of this structure is that the designation would be voluntary, so companies would not have to use these common names. The FDA could also take a more direct stance by requiring manufacturers to label insects by both their common and scientific name. Another method to solve this problem would be to regulate insects as an allergen. In this case, after the scientific name in an ingredient label, producers would have to add the major food group, which would be insect.[165] For example, an ingredient label could say "lecithin (soy), flour (wheat), and *Acheta domestica* (insect)."[166] "Insect" would also have to be included in the separate, bolded list of allergens after the ingredient list. For example, the allergen list would say "Contains soy, wheat, and insect." By addressing insects for what they are on food labels, consumers will become more familiar with their presence and will also be able to protect themselves against allergic reactions.

Additionally, while this paper focuses on regulatory solutions, I would also advise Congress to authorize funds for the FDA to conduct a study on best practices in the insect farming industry. As the industrialized mass production of insects for human consumption is a relatively new practice, a study to determine optimal production and preservation methods for insects would allow the FDA to adopt appropriate regulations backed by science.[167] Although "no significant health problems have arisen from the consumption of edible insects," studies in mass production are lacking.[168] The performance of a study

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165 *Food Allergies*, FDA (Jan. 10, 2023), https://www.fda.gov/food/food-labeling-nutrition/food-allergies.
166 *Id.*
167 VAN HUIS ET AL., *supra* note 5, at 117.
168 *Id.*

would also serve as an additional assurance to interested consumers that their food was safe. Overall, it would aid in the final goal of easing consumers towards the acceptance of insect consumption, all in an effort to serve society as conventional food sources may become harder to obtain.

IV. CONCLUSION

Insect farming is a new, largely unregulated industry with substantial potential for growth, especially considering its environmental, nutritional, and economic benefits when compared to conventional farming. For the safety of consumers and to aid in the normalization insect consumption, the FDA should regulate the industry sooner rather than later.

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