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# California Carbon Offsets and Working Forest Conservation Easements

*Jess R. Phelps and David P. Hoffer*

## ABSTRACT

California’s cap-and-trade system is a vital laboratory for testing the effectiveness of this market-driven approach in meeting greenhouse gas emission reduction goals and the use of forestry-based carbon offsets within these systems generally. Based on this experience, this Article explores one of the primary challenges, layering offsets with working forest conservation easements, which currently limits opportunities to effectively use these tools in concert. Ultimately, this market may need to foster and rely on natural linkages with working forest conservation easements to develop these offsets and to better ensure that the critical societal objectives of these projects are being met.

## ABOUT THE AUTHORS

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## INTRODUCTION

Over the past several decades, a consensus has been growing regarding the urgent need to substantially reduce anthropocentric greenhouse gas (GHG) emissions in order to limit the environmental, economic, and social damage associated with climate change and a warming planet.<sup>1</sup> Within the United States, California has taken a leadership role in this area with the 2006 passage of Assembly Bill 32, the Global Warming Solutions Act.<sup>2</sup> This legislation was intended to reduce the state's greenhouse gas emissions to 1990 levels by 2020 (a nearly 30 percent statewide drop).<sup>3</sup> In 2010–11, the California Air Resources Board (ARB) adopted a cap-and-trade program to place an upper bound on GHG emissions in the state and to allow for trading of allowances<sup>4</sup> as well as the use of offsets within this newly created carbon market.<sup>5</sup> Offset projects enable regulated entities to meet a portion of their reduction goals by purchasing environmental credits that have been created to absorb (or offset) this marginal amount of emissions through a variety of market-based environmental mechanisms.<sup>6</sup> The creation of a mandatory carbon market in California provides an ongoing demand for carbon offsets over a sustained period as

1. See, e.g., Jessica Owley et al., *Climate Change Challenges for Land Conservation: Rethinking Conservation Easements, Strategies, and Tools*, 95 DENV. L. REV. 727, 727–35 (2018) (profiling these challenges).

2. Global Warming Solutions Act, ch. 488, 2006 Cal. Stat. 3419 (codified at CAL. HEALTH & SAFETY CODE §§ 38,500–38,599 (2012)).

3. See Dylan Jenkins, *Cash for Carbon Revisited*, FOREST LANDOWNERS, May/June 2015, at 37, <http://digital.graphcompubs.com/article/Cash+For+Carbon+Revisited/2002722/0/article.html> [<https://perma.cc/7XMY-8PHV>]. This significant market represents the “world’s eighth-largest economy representing two percent of global GHG emissions.” *Id.*

4. See *Allowance Allocation*, CAL. AIR RES. BD., <https://www.arb.ca.gov/cc/capandtrade/allowanceallocation/allowanceallocation.htm> [<https://perma.cc/3WSJ-FJ5W>] (explaining the role of allowances under current ARB regulations).

5. See, e.g., Felicity Barringer, *Cap and Trade, the California Way*, N.Y. TIMES (Oct. 31, 2010), <https://green.blogs.nytimes.com/2010/10/31/cap-and-trade-the-california-way> [<https://perma.cc/SM9K-CPG4>] (explaining the state’s pending adoption of this system); see also ENVTL. DEFENSE FUND, *THE ROLE OF OFFSETS IN CALIFORNIA’S CAP-AND-TRADE REGULATION, FREQUENTLY ASKED QUESTIONS* (2012), <https://www.edf.org/sites/default/files/OffsetsPercentagesFAQFinal%20041612.pdf> [<https://perma.cc/3SLL-P6MA>] (providing overview of the economic rationales behind the offsets and limitations generally).

6. Robert N. Stavins, *A Meaningful U.S. Cap-and-Trade System to Address Climate Change*, 32 HARV. ENVTL. L. REV. 293, 297 (2008) (providing overview of this concept); see also James Salzman et al., *Payments for Ecosystems Services: Past, Present and Future*, 6 TEX. A&M L. REV. 199, 216–19 (2018) (profiling the challenges facing forest carbon offset projects generally).

GHG emitters in the state work to meet ambitious statutory GHG reduction goals.<sup>7</sup> To this end, the California carbon market is laying the critical groundwork for learning what works in using offsets effectively as part of an overall strategy to efficiently meet targeted climate-related objectives.

From California's experience, important lessons can be learned about how to design offsets that work in parallel with other conservation finance tools. In particular, forestry-based California carbon offsets (CCOs), projects designed to sequester carbon on the working landscape,<sup>8</sup> have natural linkages with working forest conservation easements, which are generally structured to protect these lands in perpetuity while ensuring the use of sustainable forestry practices and preventing forest fragmentation.<sup>9</sup> Both tools align well with sustainable timberland investment strategies, which are similarly designed to encourage conservation-minded management of forest resources over a longer-term horizon while providing a return on this investment.<sup>10</sup> Given the scale of many conservation projects, a variety of conservation finance tools are increasingly required to make these larger transactions possible, giving timberland investors a significant role in making the economics of these projects work.<sup>11</sup>

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7. Ann E. Carlson, *Designing Effective Climate Policy: Cap-and-Trade and Complementary Policies*, 49 HARV. J. LEGIS. 207, 224–25 (2012). Some have recently criticized the effectiveness of the forest-based offsets in delivering GHG emission reductions. See Will Kane, *New Paper: State's Cap-and-Trade Program is Falling Short of Goals*, BERKELEY NEWS (May 7, 2019), <https://news.berkeley.edu/2019/05/07/new-paper-states-cap-and-trade-program-is-falling-short-of-goals> [<https://perma.cc/W4QG-Y2L7>] (summarizing the work of Barbara Haya, a UC Berkeley researcher). The ARB has expressed objections to this work. See CAL. AIR RES. BD., U.S. FOREST OFFSET PROJECTS 19 (May 30, 2019), <https://www.arb.ca.gov/cc/capandtrade/offsets/overview.pdf> [<https://perma.cc/A7HK-UPXB>] (challenging the conclusions drawn in this work). Other researchers have found California's use of forestry-based offsets to have been more effective. See Chaeri Kim & Thomas Daniels, *California's Success in the Socio-Ecological Practice of a Forest Carbon Offset Option to Mitigate Greenhouse Gas Emissions*, 1 SOCIO-ECOLOGICAL PRAC. RES. 125, 135 (2019) (exploring California's approach and success in this area in meeting its initial goals for lower carbon emissions).

8. Elizabeth L. Wroblecka, *Selling Carbon Offsets: A Potential Source of Funding for Forest Conservation*, SAVING LAND (2015), at 22; see also Will Price, *Saving the Sink: Conserving Stored Carbon on Private Forest Lands*, PINCHOT INST. FOR CONSERVATION, <http://www.pinchot.org/doc/532> [<https://perma.cc/CF53-F8DZ>] (profiling these potential benefits).

9. Dan Tesini, *Working Forest Conservation Easements*, 41 URB. LAW. 359, 359–62 (2009) (providing overview of this tool); Jessica Owley & Stephen J. Tulowiecki, *Who Should Protect the Forest?: Conservation Easements in the Forest Legacy Program*, 33 PUB. LAND & RESOURCES L. REV. 47, 65 (2012) (profiling working forest conservation easements generally).

10. See John D. Echeverria, *Regulating Versus Paying Land Owners to Protect the Environment*, 26 J. LAND, RESOURCES, AND ENVTL. L. 1, 18–19 (2005) (exploring the “rise of large investor funds focused on private timberlands of interest to the conservation community.”).

11. See CREDIT SUISSE ET AL., CONSERVATION FINANCE FROM NICHE TO MAINSTREAM: THE BUILDING OF AN INSTITUTIONAL ASSET CLASS 8–11 (2016) (discussing this growing need).

There are, however, barriers that currently limit the opportunities for sustainability-focused timberland investors interested in carrying out forestry-based CCO projects to pursue the conveyance of working forest conservation easements.<sup>12</sup> Some of these barriers are regulatory, such as ensuring additionality (benefit beyond what is provided by the working forest conservation easement), but can complicate efforts to layer these tools.<sup>13</sup> Other challenges are transactional, particularly the considerable cost of quantifying and verifying the carbon sequestered by a working forest.<sup>14</sup> These costs can hopefully be reduced over time as ARB and other participants in the California carbon market learn how to more efficiently and effectively establish and document the benefits associated with forestry-based CCO projects.<sup>15</sup>

For timberland investors pursuing sustainability-related objectives, overcoming the roadblocks related to the integrated use of forestry-based CCOs and working forest conservation easements is important since layering these tools has strong potential to provide both climate-related benefits as well as important landscape protection and conservation benefits.<sup>16</sup> To explore this

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12. For a brief overview of these investment forms, see Chris Martin, *Could a Mature Timberland Asset Class Spur Conservation?*, CONSERVATION FINANCE NETWORK (July 25, 2018), <https://www.conservationfinancenetwork.org/2018/07/25/could-mature-timberland-asset-class-spur-conservation> [<https://perma.cc/JY49-RYTV>]. The use of carbon offset sales as part of a timberland investment strategy is not yet a “mainstream” approach, but a certain subset of these investors, defined here loosely as sustainable timberland investors, actively seeks to employ this tool as part of its funding mix, and depending on the longterm strength of this market, more mainstream timberland investors may seek to access this market. *Id.*

13. See CAL. CODE REGS. tit. 17, § 95973(a)(2) (discussing additionality requirements); CAL. AIR RES. BD., COMPLIANCE OFFSET PROTOCOL, FORESTRY-BASED PROTOCOL § 3.4, <https://ww3.arb.ca.gov/cc/capandtrade/protocols/usforest/forestprotocol2015.pdf> [<https://perma.cc/XZ6K-MNSB>] [hereinafter FORESTRY-BASED PROTOCOL]; see also Jessica Campbell et al., *Barriers to Achieving Additionality in Carbon Offsets: A Regulatory Risk Perspective*, 61 J. ENVTL. PLANNING AND MGMT. 2570 (2018) (discussing this challenge).

14. Dylan Jenkins, *The Business Case for California Forest Carbon Offsets*, THE FORESTRY SOURCE, 7 (2013); see also John Dillon, *Money Growing on Trees? Vermont Forest First in State for California Carbon Market*, VPR (June 26, 2019), <https://www.vpr.org/post/money-growing-trees-vermont-forest-first-state-california-carbon-market> [<https://perma.cc/YD3C-EUKN>] (exploring the transaction costs for creating forestry-based CCOs on a 5400 acre Vermont forest conserved by the Nature Conservancy (over \$200,000)); but see John Dillon, *Smaller Trees Stump Nature Conservancy's Carbon Project*, VPR (Dec. 11, 2019), <https://www.vpr.org/post/smaller-trees-stump-nature-conservancys-carbon-project#stream/0> [<https://perma.cc/7THF-N9V2>] (noting that this project ultimately was not viable in the California market based on the developer's inventory work not meeting anticipated carbon volumes).

15. See ENVTL. DEFENSE FUND ET AL., CALIFORNIA: AN EMISSIONS TRADING CASE STUDY 12–13 (2015), <https://www.edf.org/sites/default/files/california-case-study-may2015.pdf> (discussing the cost issues associated with creation of these credits generally) [<https://perma.cc/G4KR-X3QW>].

16. See also KEEPING MAINE'S FORESTS, ADOPTION OF CARBON CREDIT PROGRAMS AMONG SFI PARTICIPANTS IN MAINE 15–16 (2017) (profiling some of the challenges within the context of Maine's experience with this market).

issue, this Article first provides a working overview of the forestry-based offsets currently allowed within the California carbon market. Second, this Article explores the role of timberland investors in these projects and focuses on several significant barriers preventing working lands conservation easements from working in better tandem with forestry-based CCOs. Ultimately, the efficient creation of forestry-based CCOs on lands secured by working forest conservation easements may provide California with a unique opportunity to develop forestry-based CCOs as part of its overall strategy to achieve its GHG emission reduction goals while also securing the future of the working landscape and forest economy in California and beyond.<sup>17</sup>

## I. UNDERSTANDING CCOs

### A. *Carbon Offsets and CCOs Generally*

The idea behind offsets in environmental law is to balance public policy objectives (here, the reduction/elimination of GHG emissions) against costs imposed on industrial firms subject to regulation.<sup>18</sup> Requiring an emitter to instantly bring its preexisting operations into compliance with an environmental regulation may be cost prohibitive, but there may be market-driven tools, such as the trading of allowances and offsets, that would allow for substantial reductions to be achieved more quickly at a lower per unit cost.<sup>19</sup> California's cap-and-trade system expressly recognizes these considerations and allows emitters to use offsets to meet a portion of their required reductions in emissions—up to 8 percent of the entity's total compliance goal.<sup>20</sup> This amount, however, has been subsequently reduced to 4 percent of covered emissions

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17. *Id.* at 1 (noting that “while the up-front payout from carbon credits can be substantial and a good way to diversify income from forest land, the land managers [surveyed] found that costs, risks, and the 100 year commitment required by carbon projects not worthwhile at current credit prices.”); Abigail Stecker, *Creating a Carbon Sequestration Right: A Legal Tool to Enhance the Use of Forest-Based Carbon Offsets*, 18 HASTINGS ENVTL. L.J. 292, 310–11 (2012) (discussing permanence requirements in CCO projects and the challenges of project design).

18. James L. Olmstead, *Carbon Dieting: Latent Ancillary Rights to Carbon Offsets in Conservation Easements*, 29 J. LAND, RESOURCES & ENVTL. L. 121, 122–23 (2009) (explaining carbon offsets generally); see also Matthew D. Hurteau et al., *Aligning Ecology and Markets in the Forest Carbon Cycle*, 11 FRONTIERS ECOLOGY & ENV'T. 37, 37–42 (2013) (profiling this tool within forest carbon markets).

19. Heather Lovell & Diana Liverman, *Understanding Carbon Offset Technologies*, 15 NEW POL. ECON. 255, 255–73 (2010) (explaining carbon offsets generally). From a design perspective, to be effective, “the annual emissions caps [under a cap and trade program] must decline over time to compel emitters to reduce overall emissions.” Kim & Daniels, *supra* note 7, at 125.

20. CAL. AIR RES. BD., CHAPTER 6: WHAT ARE THE REQUIREMENTS FOR OFFSET CREDITS AND HOW ARE THEY ISSUED? 47 (Dec. 19, 2012), <http://www.arb.ca.gov/cc/capandtrade/offsets/chapter6.pdf> [<https://perma.cc/6ERD-PEH9>] [hereinafter REQUIREMENTS FOR OFFSET CREDITS].

from 2021–25, and to 6 percent from 2026–30; half of these offsets must directly provide air and water quality benefits within California (or be state-based projects).<sup>21</sup>

California has developed protocols that must be followed for the various forms of CCOs.<sup>22</sup> To date, ARB has adopted six offset protocols: (1) ozone depleting substances; (2) agricultural methane gas destruction; (3) urban forestry; (4) mine methane capture; (5) rice cultivation; and (6) forestry-based projects.<sup>23</sup> As of March 2019, ARB has issued over 150 million offset credits under these protocols.<sup>24</sup> The U.S. forestry-based protocol has been the most frequently utilized, accounting for nearly 120 million of the 150 million total CCOs created as of March 2019.<sup>25</sup>

### B. *Forestry-Based CCOs*

Within California's U.S. forestry-based subcategory, there are three distinct paths for qualifying a CCO: (1) afforestation/reforestation (restoring forests to denuded land); (2) avoided conversion (preventing land from being developed or converted away from forest use); and (3) improved forest management (projects designed to maintain or increase carbon stocks relative to the land's baseline upon enrollment) (IFM projects).<sup>26</sup> Each recognizes the role that forests can play in providing ecosystem services as a form of carbon sink.<sup>27</sup> To establish an offset project under the Forestry-Based Protocol, which allows for the sale of CCOs, "projects must be on forests that occur naturally in a region, have forest management above the standards required by law, and create climate gains that endure for at least 100 years."<sup>28</sup> All forest offset projects are effectively longterm carbon supply agreements between the forest owner, offset buyer, and the state of California to (1) maintain or increase project carbon stocking levels present at the time of project commencement, (2) demonstrate sustainable forestry products as defined by California's

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21. See CAL. HEALTH & SAFETY CODE § 38562(c)(2)(E)(i).

22. See *Compliance Offset Program*, CAL. AIR RES. BD., <https://www.arb.ca.gov/cc/capandtrade/offsets/offsets.htm> [<https://perma.cc/L74T-JEQF>] (providing overview of the various protocols and project types).

23. ANN CARLSON & DANNY CULLENWARD, INDEP. EMISSIONS MKT. ADVISORY COMM., SUBCOMMITTEE REPORT ON OFFSETS (2018), [https://calepa.ca.gov/wp-content/uploads/sites/6/2018/09/6d.-IEMAC\\_Meeting\\_Materials\\_9-21-18\\_\\_Subcommittee\\_Report\\_on\\_Offsets.pdf](https://calepa.ca.gov/wp-content/uploads/sites/6/2018/09/6d.-IEMAC_Meeting_Materials_9-21-18__Subcommittee_Report_on_Offsets.pdf) [<https://perma.cc/TQ4S-FHTK>] [hereinafter IEMA REPORT].

24. *Compliance Offset Program*, *supra* note 22.

25. *Id.*

26. Laurel Bates *et al.*, *Accounting for Harvested Wood Products in a Forest Offset Program: Lessons from California*, 27 J. FOREST ECON. 50, 51 (2017) (profiling the three paths for forestry-based CCOs); see also FORESTRY-BASED PROTOCOL, *supra* note 13, § 1.1(a) (explaining that the purpose of the protocol is to "quantify greenhouse gas emission reductions and greenhouse gas removal enhancements associated with the sequestration of carbon achieved by increasing and/or conserving forest carbon stocks.").

27. Kim & Daniels, *supra* note 7, at 126.

28. Wroblecka, *supra* note 8, at 4.



compliance offset protocol for U.S. forests, and (3) monitor and independently audit project compliance with all requirements.<sup>29</sup>

For forestry-based CCO projects, the first step is generally to conduct a timber inventory, which can be labor-intensive and costly, but critical for modeling and establishing a forest's carbon baseline.<sup>30</sup> Based on this field work and modeling, a project plan will need to be developed, approved by ARB, and submitted to an approved carbon registry.<sup>31</sup> It is estimated that at 2019 prices for CCOs, a minimum of 5,000 acres is needed to make a project cost-effective from an investment standpoint, given the substantial project and compliance costs.<sup>32</sup> One offset credit is created for every metric ton of atmospheric CO<sub>2</sub> that is sequestered, which can then be directly sold to an emitter to meet its compliance obligations.<sup>33</sup>

One of ARB's primary objectives is ensuring that offset projects have lasting impacts, and a few key concepts help to explain how ARB achieves this goal. First, the Forestry-Based Protocol require that the GHG emission reductions be permanent, which is defined as lasting at least one hundred years.<sup>34</sup> Relatedly, forestry-based projects have a defined project life of one hundred years during which the forestry-based project must continue to monitor, report, and verify offset data.<sup>35</sup> There are three potential exceptions to this minimum time commitment: (1) the project terminates due to an unintentional reversal (causing the carbon stocks to fall below the baseline carbon levels); (2) the project is sold to an entity that does not take over the project's responsibilities and commitments (which will result in credits being retired and trigger a

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29. See Jenkins, *Cash for Carbon Revisited supra* note 3, at 37; see also FORESTRY-BASED PROTOCOL, *supra* note 13, § 3.1(a)(2). To date, “[c]hallenging eligibility requirements for [AC projects] and high capitalization costs and extended ROI horizon for [AR projects] make these two project types a limited opportunity for most forest owners. At least over the next several years, IFM projects will continue to contribute most of the compliance offsets.” Dylan Jenkins, *Carbon Offsets: A Viable Opportunity for Forest Landowners?*, CONSULTANT, 2018, at 22, 23, [hereinafter Jenkins, *Carbon Offsets*]. Based on this predominance, to the extent that this Article refers to forestry-based CCOs, unless otherwise specifically noted, references are to IFM CCOs. See also FORESTRY-BASED PROTOCOL, *supra* note 13, § 2.2 (summarizing requirements for IFM based projects).

30. See Jenkins, *Carbon Offsets, supra* note 29; FORESTRY-BASED PROTOCOL, *supra* note 13.

31. *Id.*

32. See Jenkins, *Carbon Offsets, supra* note 29, at 25.

33. KATHERINE HSIA-KIUNG ET AL, ENVTL. DEFENSE FUND, CARBON MARKET CALIFORNIA: A COMPREHENSIVE ANALYSIS OF THE GOLDEN STATE'S CAP-AND-TRADE PROGRAM 3 (2014), [http://www.edf.org/sites/default/files/content/ca-cap-and-trade\\_1yr\\_22\\_web.pdf](http://www.edf.org/sites/default/files/content/ca-cap-and-trade_1yr_22_web.pdf) [https://perma.cc/AD4X-EDZ5].

34. FORESTRY-BASED PROTOCOL, *supra* note 13, § 3.5. This permanence requirement is met through at least three mechanisms: (1) monitoring and verification; (2) the requirement for compensation/replacement to address losses associated with intentional reversals; and (3) the buffer account requirement to provide protection against unintentional loss of carbon sequestration. *Id.*

35. *Id.* at § 1.2(a)(42).



replacement obligation); and (3) the project is voluntarily terminated (which also results in retired credits).<sup>36</sup> Overall, these three concepts (permanence, project life, and minimum time commitment) collectively work to ensure long-lasting carbon reduction goals are achieved while preserving some flexibility to address future uncertainty.

As far as working-forest conservation easements are concerned, for avoided conversion projects, ARB requires the landowner to enter a qualified conservation easement that provides ARB with the right to enforce the easement against the landowner if the carbon goals are not met.<sup>37</sup> For IFM or afforestation projects, recording a qualified conservation easement may help reduce project risk and, in turn, the level of required contribution to the buffer/reserve pool.<sup>38</sup> To ensure that the required levels of GHG reductions are met over time, a certain percentage of the offsets created by each project, typically 10–20 percent of the total, are placed in a buffer/reserve pool to address risks associated with unintentional reversals/release of the sequestered carbon (such as through a wildfire event).<sup>39</sup> This “reserve” amount will potentially be less if a qualified conservation easement is entered into on the theory that a conservation easement better assures the project’s permanence.<sup>40</sup> “Credits are removed from the buffer and sold as the risk of the forest not meeting its sequestration targets declines.”<sup>41</sup>

Beyond permanence considerations, the protocols also serve to ensure carbon reduction impacts are actually achieved.<sup>42</sup> For projects where commercial logging is to occur, sustainable forestry practices must be followed, which include (1) maintaining a management plan across all landowner holdings that

36. *Id.* at § 3.5.1(b).

37. *See, e.g.,* CAL. AIR RES. BD., ARB COMPLIANCE OFFSET PROGRAM, U.S. FOREST OFFSET PROTOCOL, FREQUENTLY ASKED QUESTIONS 8, [https://www.arb.ca.gov/cc/capandtrade/protocols/usforest/resources/faq\\_102913\\_post.pdf](https://www.arb.ca.gov/cc/capandtrade/protocols/usforest/resources/faq_102913_post.pdf) [<https://perma.cc/CFW3-EVHS>] [hereinafter FREQUENTLY ASKED QUESTIONS] (elaborating on the requirements for a Qualified Conservation Easements under the ARB’s jurisdiction); *see also* Jenkins, *Carbon Offsets*, *supra* note 29, at 25 (noting that an IFM project may receive more offsets if a “qualified” conservation easement is utilized). Notably, the protocol language is not limited to carbon goals, it provides ARB the right to enforce any terms of the conservation easement (some of which may not involve carbon). *See* FORESTRY-BASED PROTOCOL, *supra* note 13, § 1.2(a)(44).

38. *Forest Carbon in California’s Cap and Trade Program*, CLIMATE ACTION RESERVE (Jan. 5, 2015), <https://www.climateactionreserve.org/blog/2015/01/05/forest-carbon-in-californias-cap-and-trade-program> [<https://perma.cc/33JE-VHAV>].

39. Hurteau et al., *supra* note 18, at 39; *see also* FORESTRY-BASED PROTOCOL, *supra* note 13, § 3.5 (discussing project life and identification of reversal events).

40. *See* FREQUENTLY ASKED QUESTIONS, *supra* note 37, at 24 (discussing this risk assessment); Letter from California Coalition of Land Trusts to Kate Gordon, Governor’s Office of Planning & Research 11–12 (Nov. 22, 2019) (on file with Authors) [hereinafter CCLT Letter] (regarding implementation failure for qualified conservation easements and carbon offsets and the current barriers blocking the use of conservation easements to minimize diversion of CCOs into the buffer pool).

41. Kim & Daniels, *supra* note 7, at 131.

42. IEMA REPORT, *supra* note 23, at 2.

is: (a) certified under SFI, ATFS, or FSC;<sup>43</sup> (b) prepared and enrolled under a state of federal forestry program (e.g. a Stewardship Program or land use taxation program); or (c) adheres to an uneven-harvest as defined by the offset protocol; and (2) that even-aged harvests defined as 50BA or less residual stocking be no greater than 40 acres with a green-up buffer requirement.<sup>44</sup> Finally, ARB has a significant ongoing enforcement mechanism in that it requires forest owners to replace previously issued CCOs if the project is terminated due to an “intentional” reversal during the enrollment period.<sup>45</sup>

In all, going through the feasibility and verification stages can be daunting, but as discussed in the following Part, the CCO requirements have the potential to mesh well with working forest conservation easements—whose sale can provide another funding stream to timberland investors seeking to produce investment returns based on sustainable land management practices.

## II. CURRENT BARRIERS TO TIMBERLAND INVESTOR CREATION OF CCOs

Despite market incentives and the strong potential for lands managed by timberland investors to participate in the offset market, there are several material barriers to entry including the challenges associated with layering working lands conservation easements with forestry-based CCOs.<sup>46</sup> This Part profiles the role that sustainability-focused timberland investors can play in conservation finance generally before exploring these barriers in more depth.

### A. *Timberland Investors and Conservation Projects*

Timberland investors, at least those focused on sustainable forest management, play a few important roles in conservation projects and in conservation

43. FORESTRY-BASED PROTOCOL, *supra* note 13, § 3.1(a)(1). These abbreviated entities are: (1) the Sustainable Forestry Initiative; (2) the American Tree Farm System; and (3) the Forest Stewardship Council.

44. See Jenkins, *Carbon Offsets*, *supra* note 29, at 25 (explaining these program requirements).

45. THE CLIMATE TRUST, *Liability Shift for Forestry Credits Expected to Have Minimal Market Effect*, CALIFORNIA CARBON.INFO (May 3, 2014) <https://www.californiacarbon.info/liability-shift-forestry-credits-expected-minimal-market-effect> [<https://perma.cc/AHS7-KQGB>] (explaining the impacts of reversal for intentional actions). Unintentional reversal, or reversal for events such as forest fires, are covered through the application of the buffer pool contributions which are determined at the project’s outset based upon various risk factors. *Id.*

46. This Article focuses on several challenges specifically related to timberland investors. One issue that is not addressed, but that creates challenges for a larger class of potentially interested landowners, is the definition of how to define a “Forest Owner” under the Forestry-Based Protocol. The current definition is quite broad, which raises concerns regarding successor liability for reversals from the easement-holding community and may complicate further division of the property. 17 CCR § 95983. The California Coalition of Land Trusts is currently working with ARB to try to narrow this definition to make it culpability-based (rather than the current joint and several liability standard). See CCLT Letter, *supra* note 40.

finance generally.<sup>47</sup> First, these entities often purchase these forested lands in fee simple.<sup>48</sup> If a timberland investor purchases the tract in coordination with a conservation organization, the conservation organization is able to assemble funding to remove the immediate threat of development with a meaningful degree of confidence in its ability to actually protect the land at the project's conclusion.<sup>49</sup> Second, lands conserved with a working forest conservation easement, the conservation outcome typically targeted by institutional investors, must have a productive use and a landowner capable of complying with a forest management plan.<sup>50</sup> Institutional timberland investors often have the professional and technical ability to comply with these requirements and can be valuable partners in facilitating the management of these projects once conserved.<sup>51</sup> Overall, timberland investors working in this area can be logical longterm partners for land trusts and federal and state conservation agencies in facilitating conservation on the ground, assisting with the financing models of these unique projects, and managing these resources once protected.<sup>52</sup>

Sustainable timberland investors also need to provide their investors with a return on their substantial investment in both the purchase and ongoing management of these forest lands, which necessitates using conservation

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47. KELLEY HAMRICK, ECOSYSTEM MARKETPLACE, STATE OF PRIVATE INVESTMENT IN CONSERVATION 2016 (Dec. 2016), [https://www.forest-trends.org/wp-content/uploads/2017/03/2016SOPICReport\\_FINAL\\_Full-REV.pdf](https://www.forest-trends.org/wp-content/uploads/2017/03/2016SOPICReport_FINAL_Full-REV.pdf) [<https://perma.cc/2CG5-YXBA>] (providing overview); see also PETER STEIN, COAL. FOR PRIVATE INV. IN CONSERVATION, CONSERVATION INVESTMENT BLUEPRINT: FOREST LANDSCAPE CONSERVATION, RESTORATION, AND SUSTAINABLE TIMBER PRODUCTION 3 (Jan. 2019), <http://cpicfinance.com/wp-content/uploads/2019/01/CPIC-Blueprint-Forest-Conservation-and-Sustainable-Timber-Production-by-Lyme-Timber-Company.pdf> [<https://perma.cc/52AK-FAGG>] (profiling business models for these types of sustainable timber investments).

48. See, e.g., Sofia Faruqi & Caroline Gagne, *Can Money Grow on Trees?*, STANFORD SOCIAL INNOVATION REVIEW (Jan. 18, 2018), [https://ssir.org/articles/entry/can\\_money\\_grow\\_on\\_trees](https://ssir.org/articles/entry/can_money_grow_on_trees) [<https://perma.cc/FAE3-EZYN>] (exploring the work of Lyme Timber in partnering with various states to protect working lands).

49. See, e.g., John Burrows et al., *Increasing the Engagement of Large Private Forestland Owners in Conservation Management* (Duke Nicholas Institute, Working Paper No. 17-07, 2017), [https://nicholasinstitute.duke.edu/sites/default/files/publications/ni\\_wp\\_17-07.pdf](https://nicholasinstitute.duke.edu/sites/default/files/publications/ni_wp_17-07.pdf) (profiling this potential point of intersecting goals); see also STEIN, *supra* note 47, at 3 (explaining the complicated deal blended finance structure of these private equity deals).

50. See Brenda Lind, *Using Conservation Easements to Protect Working Forests*, EXCHANGE, Spring 2001, at 10, 13 (discussing forest management plans and the use of this mechanism within working forest conservation easements).

51. Shea Flanagan, *New Impact Investing Partnership Fuels Ranch Conservation*, CONSERVATION FINANCE NETWORK (Dec. 19, 2018), <https://www.conservationfinancenetwork.org/2018/12/19/new-impact-investing-partnership-fuels-ranch-conservation> [<https://perma.cc/4EYV-4TTX>] (profiling the role of investment firms in providing transactional experience).

52. See Kevin Harnish, *Economic Benefits of the Working Forest Fund*, THE CONSERVATION FUND (Aug. 7, 2017), <https://www.conservationfund.org/blog/land/1685-economic-benefits-of-the-working-forest-fund> [<https://perma.cc/WMW4-KPRM>] (profiling TCF's work with timberland investors to protect working forests).

finance strategies.<sup>53</sup> For sustainability-focused timberland investors, this sometimes involves the sale of a working forest conservation easement.<sup>54</sup> This transaction allows the timberland investor to continue carrying out sustainable harvesting activities pursuant to a forest management plan, but prevents the land from being developed or converted to nonforest use.<sup>55</sup> The appraised value of this conservation easement will hinge on the valuation of the land before and after the conservation easement is conveyed.<sup>56</sup> This differential can be significant, providing the timberland investor with an early return and lowering the price of the land for a future buyer (feeding into the revenue model for the timberland investment).<sup>57</sup> Overall, working forest conservation easements can play an important role in making sustainable timberland investments work. However, other conservation finance tools, such as CCOs, also have a potentially important catalytic role as the value of these additional ecosystem services are recognized and capitalized.<sup>58</sup>

#### B. *Timberland Investors and Forestry-Based CCOs*

The unique role that timberland investors can play in the California carbon market is driven by the fact that these firms own and control forest assets at an unusually large size and scale.<sup>59</sup> The scale of institutional timberland investor ownership allows for offsets to be efficiently produced.<sup>60</sup> Thus,

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53. Vivian Marino, *For Some Investors, Money Grows on Trees*, N.Y. TIMES (May 27, 2007), <https://www.nytimes.com/2007/05/27/realestate/commercial/27sqft.html> [<https://perma.cc/8DFH-74KG>] (discussing this form of investment).

54. Peter Stein, *Conservation Easements*, SILVICULTURE MAGAZINE, Winter 2010, 6 (discussing this form of easement).

55. See ELIZABETH BYERS & KARIN M. PONTE, *THE CONSERVATION EASEMENT HANDBOOK* 208–09 (2d ed. 2005).

56. See, e.g., TOM MORGAN, DUNCAN & BROWN REAL ESTATE, *APPRAISALS FOR WORKING LAND EASEMENTS: CONSIDERATIONS IN OREGON*, OREGON LAND TRUSTS (Oct. 2017), <https://oregonlandtrusts.org/wp-content/uploads/2019/04/Appraisals-for-working-land-easements-in-Oregon-final.pdf> [<https://perma.cc/NF7E-AXRE>] (discussing appraisals of working lands generally).

57. Peter Howell, *Seeing the Forest for the Trees: The Future of Investing in the North Woods*, 16 MAINE POLICY REV. 38, 41(2007).

58. See, e.g., *Carbon Program*, DOWNEAST LAKES LAND TRUST, <https://downeastlakes.org/forest-activities/carbon-program> [<https://perma.cc/XDY4-ZTGB>] (profiling the importance of carbon offsets to a Maine-based conservation project); see also WILLIAM S. KEETON ET AL., *VERMONT FOREST CARBON: A MARKET OPPORTUNITY FOR FORESTLAND OWNERS* 3 (2019) (explaining that aggregation is not allowed under ARB protocols—requiring more scale and size for projects seeking to access this market).

59. Derek W. Thompson & Eric N. Hansen, *Institutional Pressures and an Evolving Forest Carbon Market*, 21 BUS. STRATEGY & THE ENV'T 351 (Sept. 2012) (discussing these opportunities within private-owned forests). But see Kristell A. Miller et al., *An Assessment of Forest Landowner Interest in Selling Forest Carbon Credits in the Lake States USA*, 25 FOREST POL'Y & ECON. 113, 113–22 (Dec. 2012) (profiling the challenges to smaller market entrants, specifically family forest landowners, in accessing these markets).

60. Erin C. Kelly & Marissa B. Schmitz, *Forest Offsets and the California Compliance Market: Bringing an Abstract Ecosystem Good to Market*, 75 GEOFORUM 99, 99–110 (Oct.

the scale of operations and goals of sustainability-focused timberland investors make their landholdings well positioned to create forestry-based CCOs.<sup>61</sup> Since a number of challenges, which this Article will explore in the following Part, currently limit sustainability-focused timberland investors from creating CCOs, this Article focuses on the issues with layering offsets on lands that are either conserved or are targeted to be conserved with working forest conservation easements.

C. *Addressing the Sequencing Issues Involving Layering Forestry-Based CCOs and Working Forest Conservation Easements*

At present, the interplay between forestry-based CCOs and working forest conservation easements is a material barrier to increased sustainability-focused timberland investor participation in the carbon market. Contribution of a qualified conservation easement is intended to allow the landowner to be subject to a reduced buffer pool contribution requirement given that the conservation is limiting reversal risk, but this has seldom, if ever, happened in practice. The challenges to integrated use vary based upon the transaction's timing, and fall into three general categories: (1) preexisting working forest conservation easements; (2) working forest conservation easements to be conveyed in connection with a forestry-based CCO project (the parallel track option); and (3) post forestry-based CCO working forest conservation easement transactions.

1. Preexisting Conservation Easements

Lands that have already been conserved are still eligible, depending on the terms of the conservation easement, for participation in CCO projects.<sup>62</sup> To qualify, the owner of the conserved lands must agree to specific measures that result in an overall increase in carbon stocks (beyond what has already been agreed to through a working forest conservation easement).<sup>63</sup> It is important in forestry-based CCO projects involving land already subject to a conservation easement to closely examine the terms of the easement and the conservation baseline to determine whether the preexisting restrictions provide sufficient flexibility to provide additional carbon benefit (and subsequently generate offsets).<sup>64</sup> If additional carbon benefits cannot be provided or can only marginally

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2016) (noting the challenges that the complexity of the CCO present to carbon market entrants).

61. See Marissa B. Schmitz & Erin C. Kelly, *Ecosystem Service Commodification: Lessons from California*, 16 GLOBAL ENVTL. POL. 90, 107 (Nov. 2016) (exploring the political balancing in creating the offsets in the California carbon market between various scales of land owners). The party-to-party nature of the sale of these offsets may also lend themselves to being sold at greater volume as no commodity market exists for the effective transfer of these offsets. See Jenkins, *Carbon Offsets* *supra* note 29, at 26.

62. Jenkins, *Carbon Offsets*, *supra* note 29, at 26.

63. *Id.*

64. KEETON ET AL., *supra* note 58, at 19 (discussing the impact and variability of impact

be provided, this land may not be a viable target for a CCO project given both the transaction costs and the limited additional value that will likely be provided by the sale of a working-forest conservation easement.<sup>65</sup>

## 2. The Parallel Track Option/Challenge

From a sustainability-focused timberland investor's perspective, the ideal scenario likely involves working land that is not already subject to either a working forest conservation easement or involved in a forestry-based CCO. This blank slate allows an investor to strategically use both tools (and, more specifically, to spread the costs of a project across various funding streams). This layering, however, can be challenging as the current regulatory framework is not well-designed to account for the unique timing considerations that are often important deal considerations for conservation projects: upon initial enrollment and for phased projects.

To meet the standards for a qualified conservation easement under the ARB protocol, this property interest must be recorded "within a year of the project start date either before or after" which limits the window for project development.<sup>66</sup> Qualification of the conservation easement matters for the carbon baseline as well as ARB's determination of a project's reversal risk rating, both of which have material financial impacts.<sup>67</sup> If the conservation easement is not recorded during this timeframe, it will not be a qualified conservation easement under the protocol.

This timeline is a challenge or barrier because project verification (and critically credit issuance) only happens after the initial reporting period. This essentially forces a landowner to assume the risk that the carbon verification may not bring the expected results, even if the price of the conservation easement was reduced in reliance or consideration of the carbon project. If an easement is not ultimately qualified, it will be deemed a preexisting legal mandate and the impacts of those restrictions will be included in the baseline for crediting additional carbon reductions.<sup>68</sup> As a result, this timing barrier serves as a material bar to trying to sequence a working forest conservation easement and a forestry-based CCO for a single project. ARB should provide flexibility to landowners and conservation easement-holders by expanding this window—provided that ARB has sufficient assurances that these parties

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of preexisting conservation easements); *see also* FORESTRY-BASED PROTOCOL, *supra* note 13, § 5.2.1(e)(1)(C) (discussing the impact of prior recorded easements in calculating the carbon baseline).

65. KEETON ET AL., *supra* note 58, at 19.

66. FORESTRY-BASED PROTOCOL, *supra* note 13, § 1.2(a)(44) (providing the requirements for "qualified conservation easements"); *id.* at § 3.6(a)(2)(C) ("Any previously recorded conservation easement must still meet, or be modified to meet, all of the requirements contained in the definition in subchapter 1.2 in order to be considered "qualified.").

67. *See id.* at § 3.6(a)(2)(C), Appendix D.

68. *Id.* at § 3.5 (discussing these timing considerations for assessing additionality and in setting the baseline).



will enter into a working forest conservation easement within a reasonable period, including retroactively issuing credits for the initial reporting period postrecording. Such a provision would create better alignment and flexibility between these two funding streams, which is critically important to ensuring that these conservation finance tools are collectively available, while creating no additional project-related risk to ARB.

Second, timing constraints and project definitions also present challenges for phased working forest conservation easements.<sup>69</sup> Phasing in a conservation easement over an entire project area is a strategy often utilized by land trusts and timberland investors to allow for conservation of these lands to happen gradually (as some of these forest properties can be sizable and require substantial funding for the purchase of a working forest conservation easement, which may require multiple annual funding cycles if relying on public financing).<sup>70</sup> There are likely a number of ways that ARB could address its concerns regarding timing and parcel configuration while also ensuring that these easements are ultimately conveyed, such as by requiring a signed purchase or option agreement and/or expanding the time horizon for these projects to actually be finalized or receive postverification credits. Any steps in this direction would also help maximize the opportunities for both tools to work together in a mutually beneficial manner.

### 3. Post-Forestry-Based CCOs

Finally, if a timberland investor ultimately wants the flexibility to subsequently convey a working forest conservation easement on lands that have been enrolled in a forestry-based CCO, it will need to proceed with caution. Ensuring the permanence of these credits requires some form of agreement (an easement or longterm agreement (100 years)) to ensure the carbon benefits are being protected over this period.<sup>71</sup> Depending upon the agreement entered into to secure the carbon benefits, this may require demonstrating to the conservation funder that additional and significant conservation value still remains unprotected in order to support acquisition of the working forest conservation easement.

Ultimately, addressing the challenges of layering and sequencing working forest conservation easements and forestry-based CCOs is one of the critical roadblocks limiting increased activity in this area by sustainability-focused timberland investors. As discussed, ARB could take a series of targeted steps to span this divide, which would spur additional timberland investor participation in this market.

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69. FREQUENTLY ASKED QUESTIONS, *supra* note 37, at 9 (discussing the requirements under Forestry-Based Protocol § 3 related to qualified conservation easement coverage).

70. See CCLT Letter, *supra* note 40, at 14.

71. FREQUENTLY ASKED QUESTIONS, *supra* note 37, at 8; FORESTRY-BASED PROTOCOL, *supra* note 13, at § 3.5.



D. *Addressing Additional Challenges of Layering Working Forest Conservation Easements and CCOs*

As discussed, conservation projects of all forms are becoming increasingly complex as the funding sources needed to accomplish conservation at scale require collective action and multiple funding streams.<sup>72</sup> Beyond the timing/sequencing issues discussed above, there are several other considerations that also merit exploration.

1. Remove the Bar Against Lands Protected by Federal Easements Participating in Forestry-Based CCO Projects

One additional challenge to timberland investor participation is that lands protected by federal conservation easements are currently barred from eligibility in the program.<sup>73</sup> While this prohibition may make sense for lands owned by the federal government in fee simple, it is difficult to see why lands protected by federally held or funded conservation easements should be barred from participating in the CCO market. The conservation of these lands, while protected by a federal entity as holder, can still be made more restrictive with additional layers of protection that are specifically designed to promote carbon sequestration. There is nothing fundamentally unique or different about a federally funded conservation easement or involving the federal government as holder that prevents CCO objectives from being achieved on these lands. Allowing lands that are protected by federally held and funded conservation easements would help to facilitate timberland investor participation in the carbon market as, given the scale of these protected parcels, these are perhaps most likely to be owned by a largescale timberland investor.

2. Provide Guidance Regarding the Appraisal Challenges

Appraising a working forest conservation easement can be challenging to even an experienced appraiser, as it typically requires comparing the “before” and hypothetical “after” valuation of a conserved tract to determine what the impact of that restriction will be for either the intended sale or donation.<sup>74</sup> When a carbon project is added, the appraisal complexity only grows.

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72. See, e.g., SALLY FAIRFAX ET AL., *BUYING NATURE: THE LIMITS OF LAND ACQUISITION AS A CONSERVATION STRATEGY*, 204–07 (2005) (exploring the growth of conservation “mega-deals”). As these markets develop, carbon stocking levels will increasingly factor into investment scenarios of sophisticated investors seeking to leverage or benefit from “over-stocked” forests. See Charles D. Kerchner & William S. Keeton, *California’s Regulatory Forest Carbon Market: Viability for Northeast Landowners*, 50 *FOREST POL’Y AND ECON.* 70, 72 (2015) (charting one of the barriers to landowners in this region is their comparatively active land management).

73. See *FORESTRY-BASED PROTOCOL*, *supra* note 13, at § 2.1(c)(5) (providing that CCOs “may not include land that is subject to a conservation easement with federal holders.”).

74. Nancy A. McLaughlin, *Conservation Easements and the Valuation Conundrum*, 19 *FLA. TAX REV.* 225, 227–31 (2016) (profiling many of the various challenges in appraising conservation easements).

To provide guidance to landowners, timber rights owners, and appraisers, it may be worth exploring, in consultation with the Appraisal Institute or another professional organization, whether standards or guidance for appraising these interests can be developed.<sup>75</sup> Continuing education or certification in this area could also be added to ensure that sufficient appraiser expertise develops in this area to meet the challenges of this unique type of valuation project.

### 3. Remain Flexible Regarding Easement/Agreement Language

As explored above, the CCO requirements ideally should be flexible enough to allow multiple funding streams to work in concert to protect targeted lands that meet the conservation and carbon sequestration goals of both the easement purchaser and ARB.<sup>76</sup> Beyond the considerations already discussed, the actual language required for a “qualified” conservation easement needs to be developed or evaluated with a similar eye towards flexibility. There will likely be growing pains or organizational learning as some easement holders will take issue with ARB’s required agreement language and, conversely, ARB may have concerns over language targeting other resource protection goals.<sup>77</sup> There is also a debate between the California Wildlife Conservation Board and the ARB with regard to what language can be inserted into a qualified conservation easement (which is hindering further activity on this front).<sup>78</sup> The challenge with multipurpose conservation projects is that the differing missions of the funders and stakeholders can result in too much focus on narrow distinctions as each seeks to achieve their specific objectives without considering the larger picture. For working forest conservation easements, the carbon goals need to be balanced against the “working” aspect of these easements, or sustainable timber production, public access, and other public policy considerations. Flexibility, balancing, and avoiding overly rigid insistence on specific language will help to ensure that these projects achieve their

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75. See, e.g., APPRAISAL INSTITUTE, *Valuation of Conservation Easements*, <http://knowledgecenter.appraisalinstitute.org/all-available-courses/valuation-of-conservation-easements?qr=1> [<https://perma.cc/RUD2-D39R>] (offering a course to teach professionals about the valuation of conservation easements).

76. On a related note, any disputes regarding certain attributes of working forest conservation easements should also be addressed in an even-handed manner with full awareness of the actual impact of inclusion or exclusion. For example, easements that rely on a forest management plan should not be penalized or deemed not to qualify based on the fact that additional forest management activities can occur in the future, but the role of this plan in providing flexibility, while meeting land management objectives as agreed to between the landowner and the easement holder, should be recognized with the landowner being able to qualify based upon additional benefits provided beyond the minimum baseline. See, e.g., Jessica Owley, *Conservation Easements at the Climate Change Crossroads*, 74 *LAW & CONTEMP. PROBS.* 199, 225–26 (2011) (profiling the trend towards the use of management plans to provide needed flexibility).

77. See, e.g., KEEPING MAINE’S FORESTS, *supra* note 16, at 15.

78. See CCLT Letter, *supra* note 40, at 12–13 (profiling the dispute between ARB and WCB on easement language).

GHG reduction goals in close coordination with the other land management objectives being advanced by the grant. Additionally, the financial goal of the timberland investor is also indirectly achieved, which is a prerequisite to generating investor interest in such projects.

To explore this and many other issues, it may also be worthwhile to develop a formal ARB-sanctioned working group, such as an additional subcommittee under the Independent Emissions Market Advisory Committee akin to the existing Subcommittee on Offsets,<sup>79</sup> focused on merging or integrating conservation easements and forestry-based CCOs. As their use continues to expand, it will be critical to work through these important issues as landowners, conservation easement holders, and ARB continue to address and evaluate more forestry-based CCO projects in the project development and project verification phases.

### CONCLUSION

There is an understandable caution in developing, expanding, and modifying the criteria and protocols around forestry-based CCOs to ensure that the desired climate benefits are actually being achieved.<sup>80</sup> Offset projects, particularly those involving lands the size and scale of the forest holdings owned by timberland investors present a unique opportunity to facilitate working land conservation while also addressing the state's climate-related goals. However, leveraging this expertise and capital will likely involve solving the transactional barriers that currently complicate the linked use of working forest conservation easements and forestry-based CCOs. If these issues are effectively addressed, this may prove to be a significant step towards meeting the state's climate objectives as well as in securing the future of the state's forest economy and working landscape.

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79. See, e.g. IEMA REPORT, *supra* note 23.

80. Alan Ramo, *The California Offset Game: Who Wins and Who Loses?*, 20 HASTINGS W.-N.W. J. ENVTL. L. & POL'Y 109, 155–56 (2014); see also JONATHAN L. RAMSEUR, CONG. RES. SERV., RL34705, ESTIMATING OFFSET SUPPLY IN A CAP-AND-TRADE SYSTEM PROGRAM 1 (2010) (discussing this issue). To develop a protocol or to implement changes to a protocol requires compliance with the Administrative Procedure Act (APA), except for changes to quantification methodologies which were exempted from the APA by Assembly Bill 32. See FORESTRY-BASED PROTOCOL, *supra* note 13, § 1.1(b); see also See CAL. CODE REGS. tit. 17, § 95971–2 (pro-filing process for creating and approving protocols).

