Public Workshop
U.S. Forest Projects
Compliance Offset Protocol

November 30, 2022

Today's Meeting Agenda

- Welcome, Purpose, and Agenda
- Overview of the Forest Offset Protocol and implementation (CARB staff)
- Recent Analysis on the Forest Offset Protocol (CARB staff)
- Presentations by Forest Offset Protocol practitioners/participants and forest science experts
- Open discussion
- Closing remarks

Overview of the Forest Offset Protocol and Implementation

Role of Offsets in Cap-and-Trade

- Compliance offset credits are verified GHG emissions reductions from outside of the Cap-and-Trade Program
- Incentivize reductions or sequestration outside the cap
- Achieve cost-effective emissions reductions as an important cost containment mechanism in the Cap-and-Trade Program
- Utilize the best available science at the time of adoption and periodically updated
- Mobilize private investment in actions to reduce GHGs

How does a forest project meet the AB 32 requirements for offset credits?

Real – additional carbon stored in trees as a direct result of project activities (Section 38562(d)(1))

Permanent – program requirements assure carbon will remain stored in trees for at least 100 years (Section 38562(d)(1))

Quantifiable – physical measurements of the trees are used to quantify stored carbon (Section 38562(d)(1))

Verifiable – independent third-party verifiers review every project (Section 38562(d)(1))

Enforceable – regulatory requirements for reversals and invalidation impact forest owners (Section 38562(d)(1))

Additional – all activities are additional to what is legally permissible, financially feasible, and business-as-usual in the region (Section 38562(d)(2))

Reward and encourage **Early Action** to reduce emissions (Section 38562(b)(1)&(3))

Courts have upheld the design of the Compliance Offset Program

- In 2012, CARB was challenged in a lawsuit contending the design of the Cap- and-Trade Regulation and Compliance Offset Protocols did not conform to statutory and regulatory requirements, particularly related to permanence and additionality
- Results
  - Trial court found CARB's design and implementation met AB 32
  - Appellate court found CARB's design and implementation met AB 32
  - California Supreme Court denied petition for review

Our Children's Earth Foundation v. California Air Resources Board (1st Dist. 2015) 234 Cal.App.4th 870 (upholding Citizens Climate Lobby and Our Children's Earth Foundation v. California Air Resources Board (2012) Case No. CGC-12-519554; 2013 WL 861396) (petition for review by California Supreme Court denied June 10, 2015)

AB 398 Criteria

- Limit an entity's offset credit usage to 4% through 2025 and 6% through 2030, with at least half of offset credits sourced from projects that provide direct environmental benefits (DEBs) to California (Section 38562(c)(2)(E)(i))
- DEBs projects must benefit the air or waters of California (Section 38562(c)(2)(E)(ii))
- Consider guidance by the Compliance Offsets Protocol Task Force to increase offset projects with DEBs in California while prioritizing disadvantaged communities, Native American or Tribal lands, and Rural and Agricultural regions. (Section 38562(c)(2)(F) & 38591.1(a))

Forest Offset Protocol Overview

- Modified from voluntary protocol developed by the Climate Action Reserve through a collaborative stakeholder process
- First adopted by the Board in 2011 after multi-year public process
- Revised versions in 2014 and 2015 after full formal rulemaking process with public workshops, extensive stakeholder interaction, and Board adoption
- Future revisions planned to update to latest science and technology
- Establishes rules and requirements for generating compliance offset credits

Forest Offset Protocol Requirements

- Requirements for estimating enhanced sequestration of carbon in trees
- Requirements for natural forest management and sustainable harvesting practices
- Requirements for calculating reversal risk rating and forest buffer pool contribution
- Requirements for monitoring, reporting, and verification over a 100-year commitment

Forest Offset Protocol Protections (1 of 2)

- The protocol supports and ensures additionality and permanence
  - Rigorous and prescriptive methods in protocol for quantifying forest carbon
  - Third-party verification and CARB review
  - Accounts for both market- and activity-shifting leakage:
    - Activity shifting leakage – the shifting of harvest activates from one location to another
    - Market shifting leakage – the shifting of harvest to other properties as a result of market demands

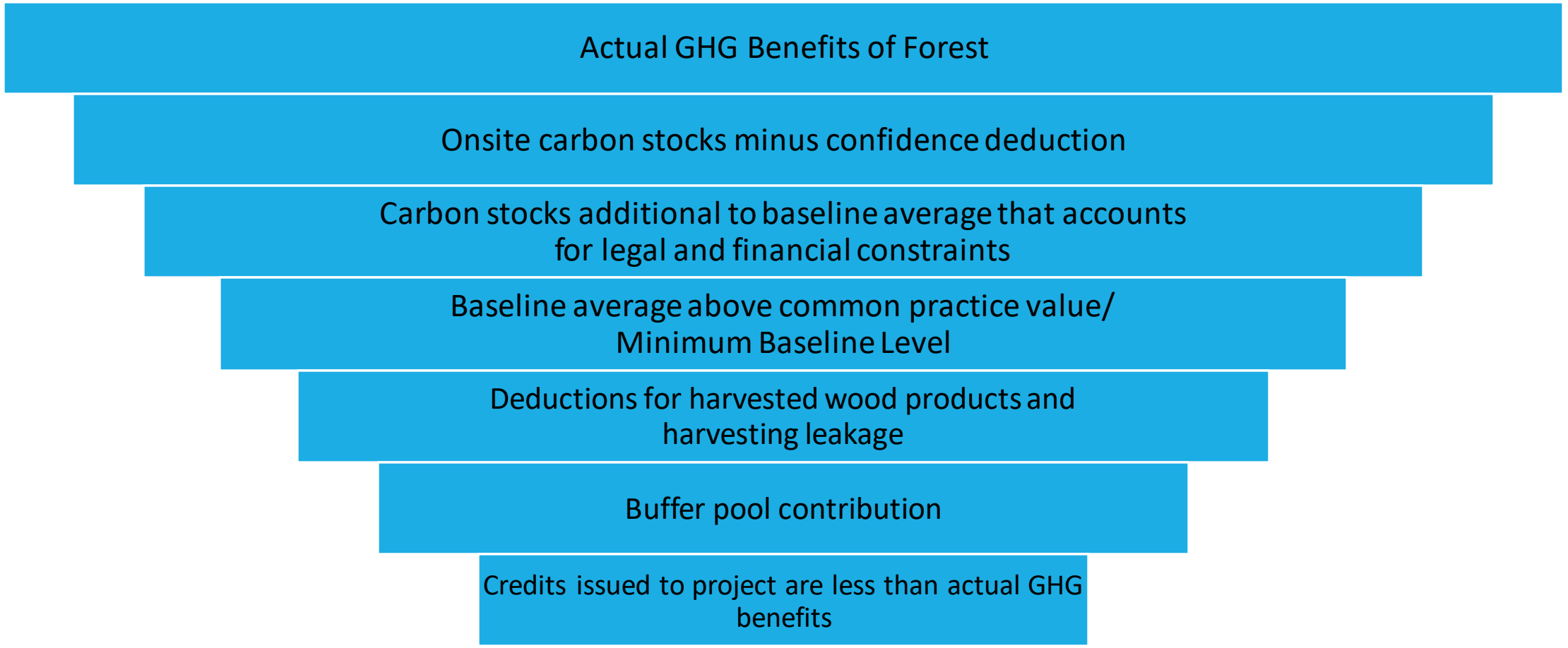
Forest Offset Protocol Protections (2 of 2)

- Annual Project Reporting (Offset Project Data Report or OPDR) required
  - Rigorous verification process that requires sampling and taking field measurements across an entire project
  - CARB and the Registries audit verifiers and review verification reports
  - CARB reviews each annual OPDR prior to issuance
  - Calculations are checked and rechecked to ensure monitoring is done accurately
  - Projects must be monitored each year and must undergo a site visit and full verification at least every 6 yeas
- Continuity of carbon stocks for 100+ years
- Establishes a floor below which projects cannot be credited (common practice)
- Requires a confidence deduction to account for uncertainty
- Establishes a Forest Buffer Account for unintentional reversals
- Provides for enforcement action

How the Forest Offset Protocol Works

- Estimate the total amount of carbon stored in trees in the project area using sound sampling and statistical methods
- Establish a project baseline using a conservative business-as-usual scenario that incorporates all legal constraints that could affect growth and harvesting scenarios
- Demonstrate the baseline growth and harvesting regime is financially feasible
- Carbon storage in the project area must be higher than carbon storage on neighboring properties
- Baseline scenario is modeled over 100 years using Board-approved growth and yield models

Principle of Conservativeness Ensures Crediting is Less than Actual GHG Benefits



Rulemaking Processes for Forest Offset Protocol

- October 2011 - Board Hearing to adopt v2011
- September 2014 - Board Hearing, Quantification Methodology (v2014)
  - Approved for Adoption with Modifications
  - Common Practice was delayed to the October 2014 rulemaking package
  - Revised protocol in 15-day public comment period
- October 2014 - Release of proposed amendments to the Protocol with formal 45-day comment period (v2015)
- December 2014 - Board Hearing, staff directed to make appropriate modifications
- June 2015 - Board Hearing, Revised approval, effective Nov. 1, 2015

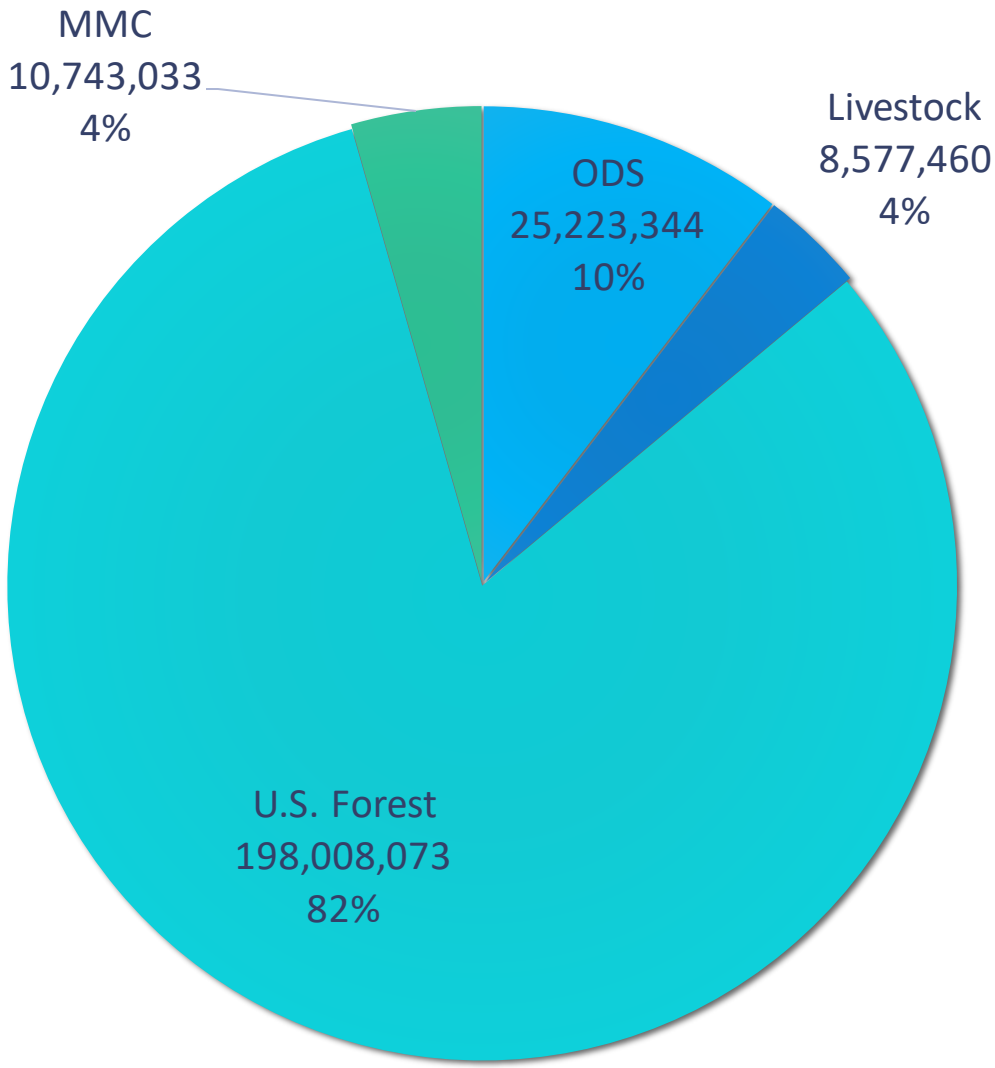
2015 Compliance Offset Protocol U.S. Forest Projects - Rulemaking Process

- Three public workshops
- One webinar on common practice
- Publicly released discussion draft
- Two informal public comment periods, numerous stakeholder meetings
- June 2015: Board approves updated U.S. Forest Protocol
- July 2015: Workshop on Guidance for Forest Protocol
- November 1, 2015: Effective Date for 2015 Forest Protocol

2015 Rulemaking – Key updates

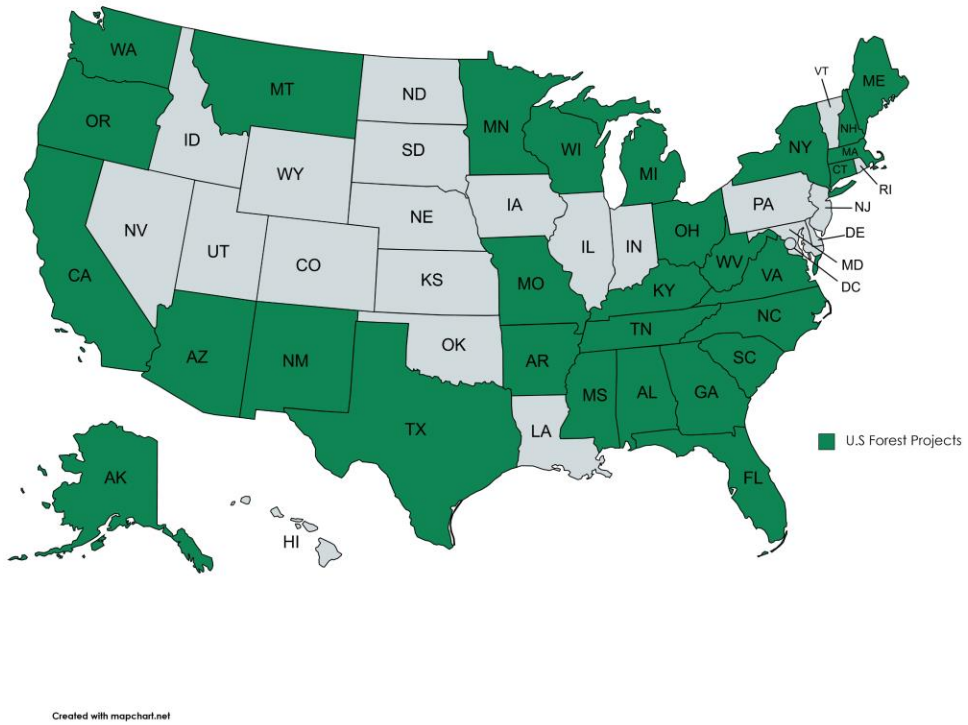
- Expanded project eligibility to parts of Alaska
- Updated common practice values
- Adjusted high and low site productivity classification to align with updated common practice values
- Modified and clarified based on stakeholder input and lessons learned from implementation on project eligibility, quantification, reporting and verification requirements
- Refined even-aged management requirements
- Allowed paired sequential sampling even if up to 10% of monumented plots cannot be identified

To date,
U.S. Forest Projects
have generated
82% of total ARB
Offset Credits

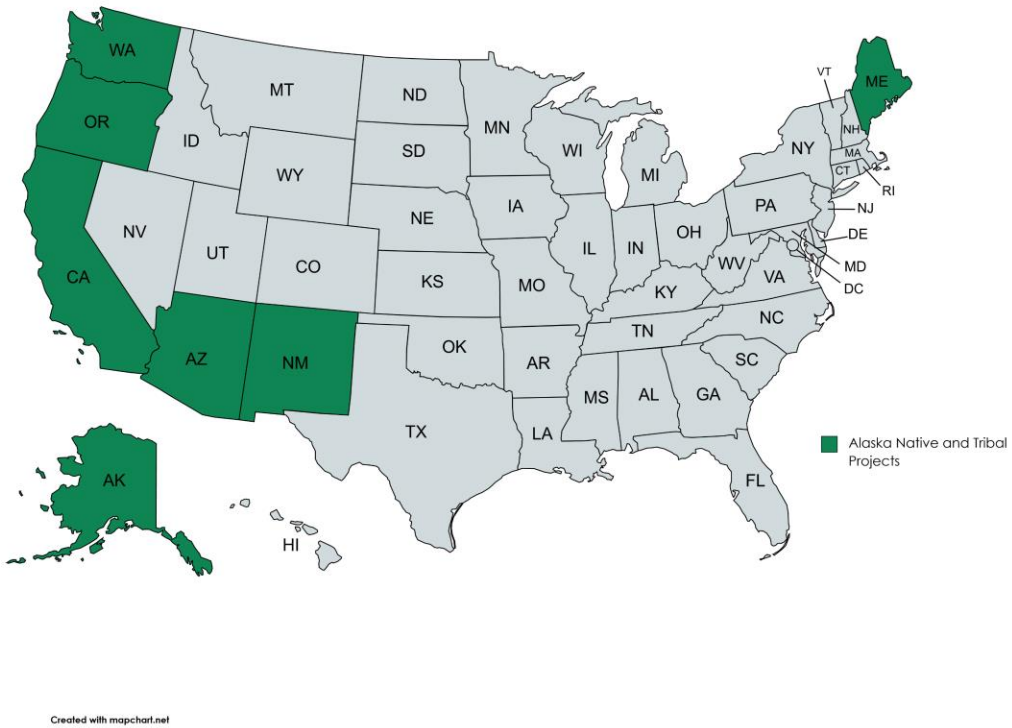


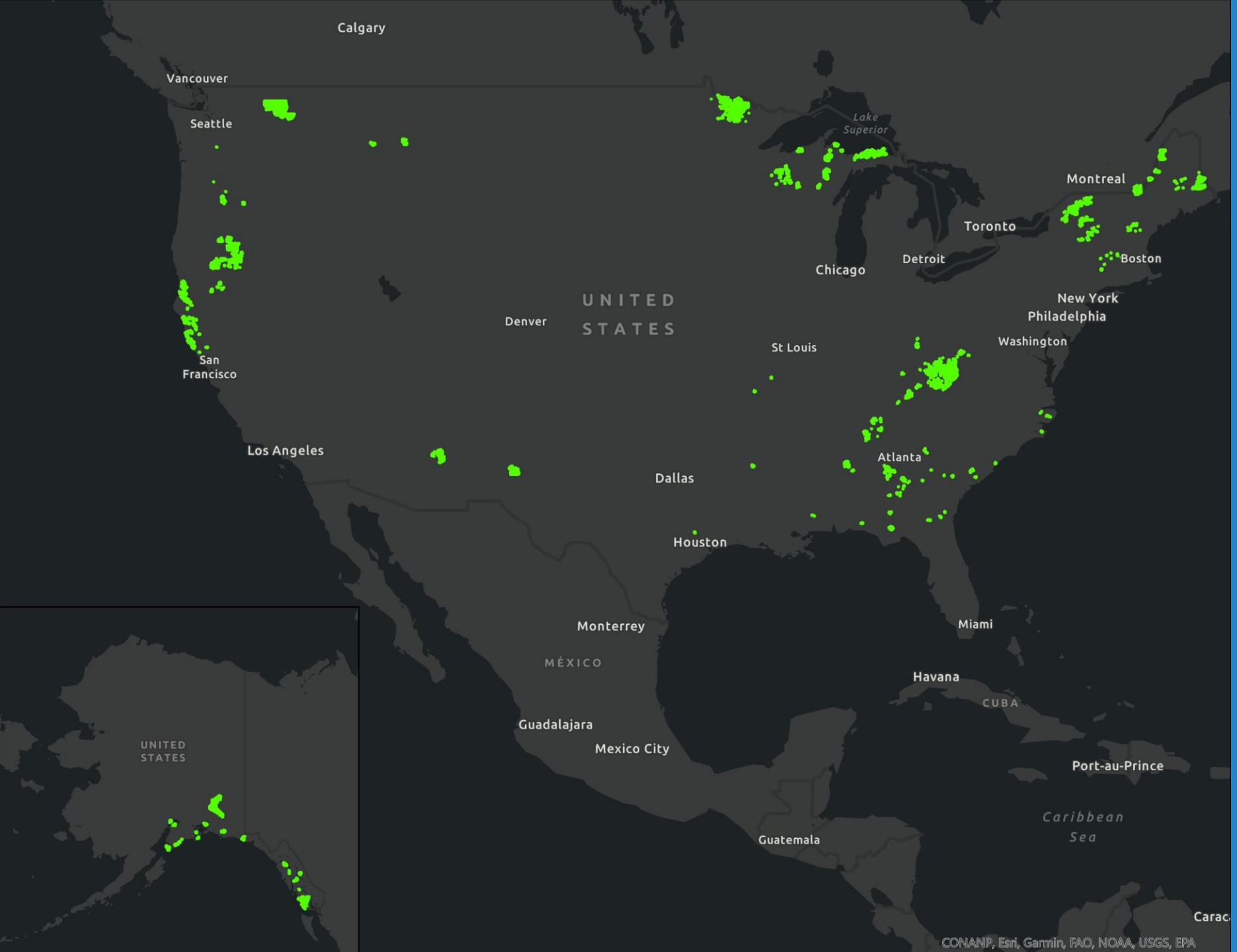
Forest Offset Projects Across the U.S.

Forest offset projects across U.S.



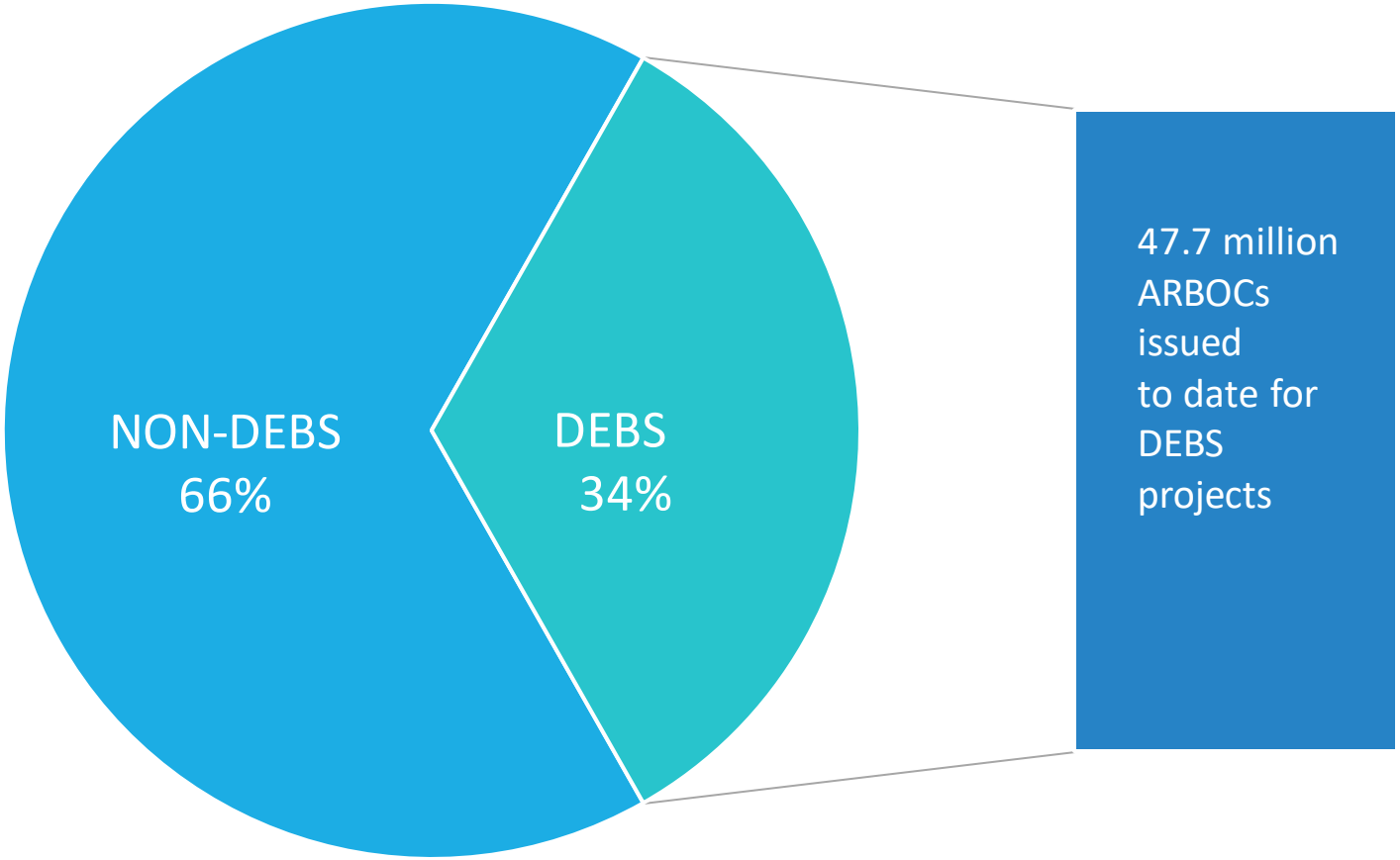
Alaska Native and Tribal projects



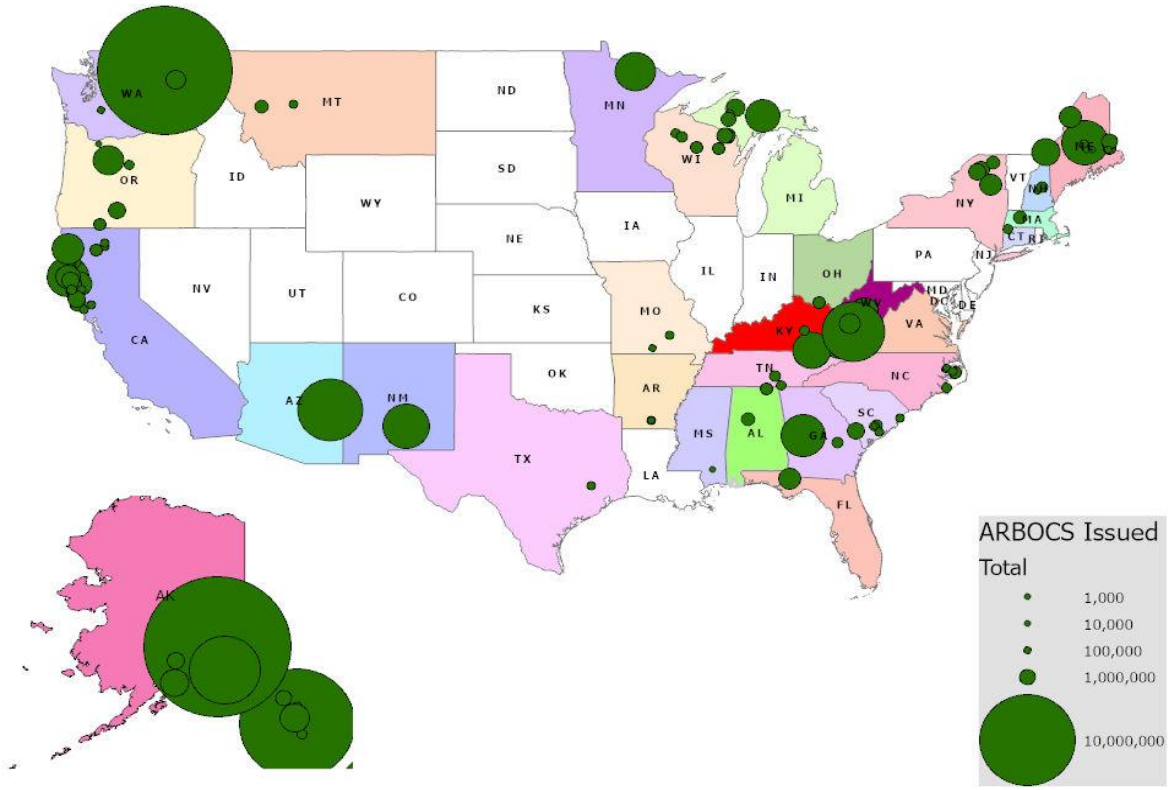


149 projects across 29 states covering approximately 5.5 million acres across the U.S.

Projects with Direct Environmental Benefits to the State (DEBS)



Offset Credits Issued by State



CA: 32,914,766 total credits; 16.6% of total

AK: 46,028,367 total credits; 23% of total

WA: 15,962,920 total credits; 8% of total

WV: 24,227,207 total credits; 12.2% of total

Forest Offset Protocol Summary

- The protocol was established through a robust public and stakeholder engagement process using the best available science at the time
- Satisfies statutory requirements in AB 32 and AB 398
- Contains requirements and protections to ensure offsets are real, permanent, quantified, verifiable, enforceable, and additional
- Provides a robust and conservative framework in which projects can earn offset credits
- Is intended to be updated over time to incorporate new science and improvements

Recent Analysis on the Forest Offset Protocol

Recent Research and Analysis

- Offsets are a relatively new market mechanism, and forest management and the associated science is continually increasing and improving over time
- Numerous studies have provided insightful assessments of the Forest Offset Protocol and made recommendations about potential improvements
  - CARB Contract with United States Forest Service assessing remote sensing data products for potential use in inventory development for forest offset projects
  - Compliance Offset Protocol Task Force recommendations
  - Accounting frameworks
  - Performance of forest offset projects in meeting additionality
  - Baseline setting methodologies
  - Reversal risk ratings
  - Leakage

Recent Research and Analysis

- New data and tools have been or are being developed which can be used to improve the Forest Protocol, such as:
  - Remote sensing products to assess and monitor management, disturbance, and other impacts over time
  - Forest inventory and carbon stock estimation techniques
  - Estimates of carbon stock reversal risks and reductions in reversal risks
  - Frameworks for assessing uncertainty of carbon stock estimates

Recent Research and Analysis

- Some recent research and analyses question the validity of issued offset credits
- Study claims non-additionality of forest offset credits due to:
  - Common practice values misrepresenting projects' assessment areas
  - Selection bias of project areas for locations where carbon stocks greatly exceed common practice values
  - Baseline scenarios not truly representing the business-as-usual management of the forest owner
- Studies claim the buffer pool fails to ensure permanence due to:
  - Wildfire risk ratings that do not reflect actual wildfire risk
- CARB has published an FAQ on the Compliance Offset Program webpage in response to these criticisms
  - https://ww2.arb.ca.gov/sites/default/files/2021-10/nc-forest_offset_faq_20211027.pdf

CARB correction on claims of Non-additionality

- Stem from a misunderstanding of the Protocol and its requirements
- The Protocol includes several safeguards to ensure a reasonable and conservative baseline scenario is set
- Legal and financial constraints must be incorporated and verified, including Best Management Practices, to ensure the baseline scenario is in line with regional management practices
- 100-year commitment by projects to ensure enhanced sequestration is permanent and additional

CARB correction on claims of Non-additionality: Common Practice

- Common Practice values, used to set the Minimum Baseline Level, are one part of setting a baseline scenario and provide a backstop to prevent unrealistic baseline scenarios
  - Calculated for each Assessment Area by U.S. Forest Service's Forest Inventory and Analysis (FIA) Program to maintain statistical validity and to minimize uncertainty
  - Calculated across the continental U.S. and Alaska at a relatively coarse scale without regard to land ownership, allowing for standardized use on all projects
  - Any method of defining boundaries for Assessment Areas is imperfect and regional averages will never represent every location accurately
- The fact that most project baselines are at or near Common Practice indicates that this backstop is serving its purpose, as legal and financial constraints could allow the baseline to be even lower, resulting in more credits issued

CARB correction on claims of Non-additionality: Baseline Constraints

- A baseline scenario establishes a conservative use case reasonably expected to occur based on legal and financial constraints
  - Immediate intentions of landowners may change due to changes in ownership, economic markets, and management objectives
  - While projects that were investigated in the critiques may not have had immediate plans to harvest, they did not include harvest restrictions in deeds/easements, thus it could be reasonably expected that some harvest may occur in the next 100 years
  - Long-standing deeds/conservation easements (i.e., those in place more than one year from project commencement) must be incorporated into the baseline scenario

CARB correction on claims of Non-additionality: Baseline Constraints

- The baseline average is the average carbon stocking over the 100 year baseline scenario. This requirement was adopted from an earlier version of the Forestry Offset Protocol under CAR. The use of the baseline average value:
  - Addresses past complications associated with a constantly fluctuating baseline, where actual onsite carbon stocks may or may not exceed baseline carbon stocks depending on the timing of the baseline and actual harvesting
  - Provides a better assessment of long-term carbon stock trends in the baseline scenario compared to using short-term changes in baseline carbon stocks to determine annual offset credit issuance
  - Eliminates incentives to customize baseline harvest timing to increase crediting and instead allows projects to model a justified baseline scenario
  - Allows for comparison with Common Practice regional averages to ensure a conservative baseline scenario

CARB correction on claims of Non-additionality: Selection Bias

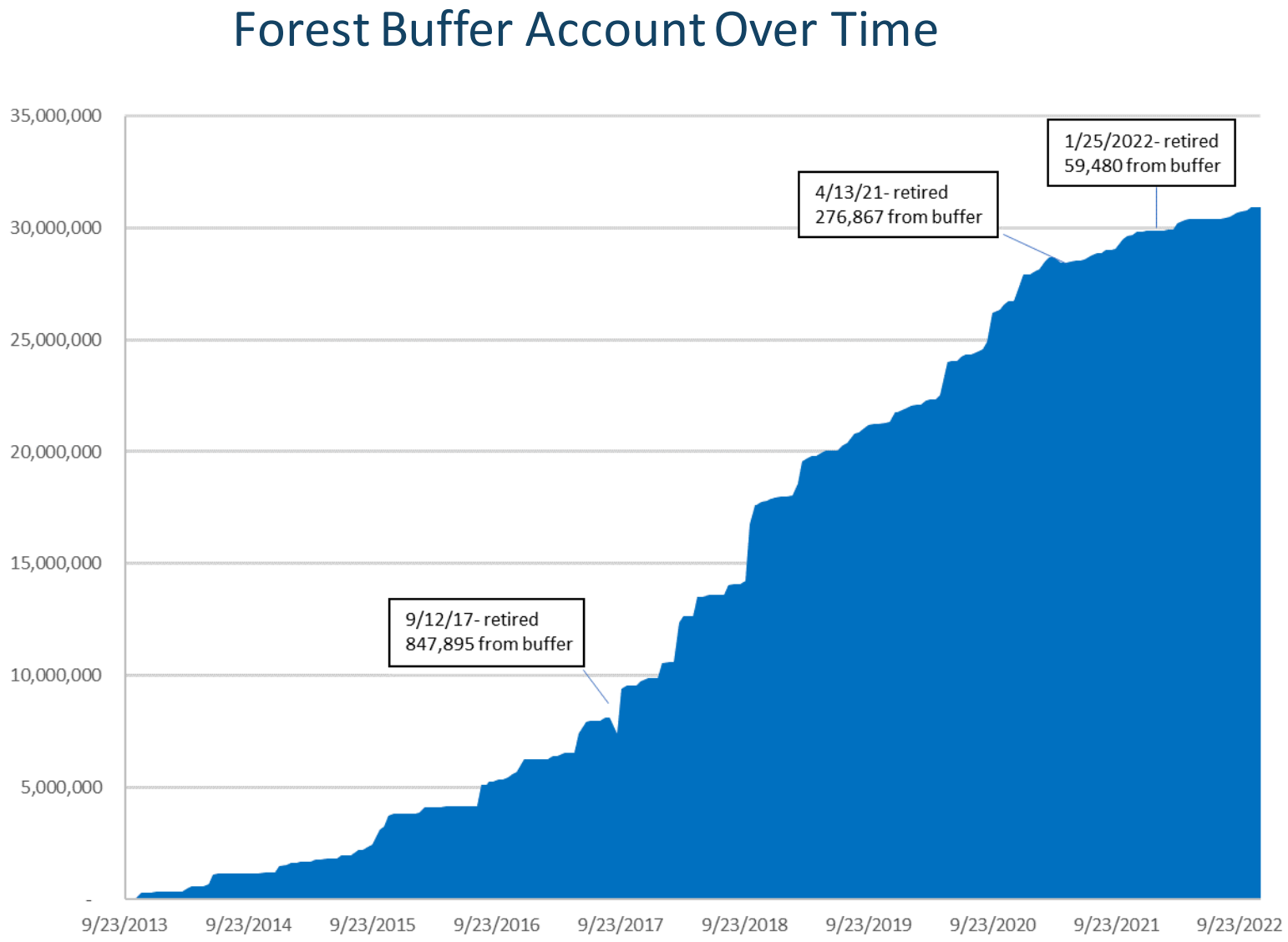
- Logical Management Unit requirements are the safeguard against selection bias of project lands under one owner
  - CARB cannot control the ownership pattern of forested landscapes
- Heavily harvested lands are eligible under the Protocol
  - Depending on how heavily harvested the lands were, Initial Carbon Stocks may fall below the Common Practice statistic, requiring a different Minimum Baseline Level that accounts for these low Initial Carbon Stocks
  - Heavily harvested lands were heavily harvested in the past and could be heavily harvested again in the future, and an offset project in such an area can incentivize lower harvesting, thus retaining higher carbon stocks

CARB correction on claims of Non-additionality: Summary

- There exist numerous possible approaches to assessing additionality beyond the methods approved in the Protocol
  - This does not invalidate the Protocol nor any offset credits that have been issued under them, instead it highlights the advancing science on offset methodologies and implementation
- Offsets generate revenue for the long-term health of the forests, and in some cases, to purchase additional lands that may be at greater risk of harvesting
- There are many potential improvements to the Protocol to address the issues identified by recent research and analysis, to be discussed in detail in future workshops

Buffer Pool

- Over 31 million credits contributed to the Buffer Account
- ~1.2 million credits retired due to unintentional reversals
- New and existing projects continue to contribute to the Forest Buffer Account



CARB correction on Forest Buffer Pool

- Forest Buffer Account contributions cover all risk categories from all forest projects, including projects in states with less wildfire risk; credits in the Forest Buffer Account are not kept separate for each risk category
- The Forest Buffer Account remains robust, and while there are no indications that the entirety of the Forest Buffer Account will be retired in a short amount of time, there is a need to update the risk ratings to incorporate the latest science on ecological risks
- CARB intends to use the latest science and data to update the risk rating quantification methodology to further ensure the permanence of issued offset credits and properly capture the reversal risks of forest projects in different parts of the U.S.

Summary of Recent Research & Analysis

- Protocols are developed through a public process using the best science and knowledge available at the time to ensure that they deliver offset credits that are real, permanent, quantifiable, verifiable, additional, and enforceable as defined by CARB
- This requires balancing scientific rigor and implementation feasibility to ensure the quality and quantity of offset credits
- Each version of the Protocol is an improvement over the previous versions, incorporating lessons learned and new science as the understanding of this field grows
- New improvements for consideration from CARB's USFS contract, offset task force recommendations, and scientific literature

Questions for Today's Discussion

1. As we consider future updates to the COP, what science should we consider incorporating?
2. What scientific progress has been made to improve our understanding of current forest practices?
3. As we consider future updates to the COP, how has the science changed and how should we consider new scientific research and findings into our update?
4. What new tools and datasets can improve forest project monitoring, reporting, and verification by reducing costs, increasing accuracy or improving data quality? Will such tools be available in the next two years, have longevity, and datasets that are nationally-based?

Questions for Today's Discussion

5. How will forests be affected by climate change such that these dynamic changes can be incorporated into our Program?
6. What are the risks to anticipate as a result of climate change in the future and how best can these be accounted for in our Program?
7. What tools are available to assess future forest risks as part of the protocol update?
8. What technical assistance or analytical support is available to allow for smaller land-owners or tribes to participate in the program?

Presentations

- Javier McKinney, Yurok Tribe
- Connie Best, Pacific Forest Trust
- Bailey Evans and Jonathan Pomp, Green Assets
- Matt Russell, Former Faculty University of Minnesota, Consultant
- Karin Riley, USFS Rocky Mountain Research

15 Minute Break

Questions and Discussion

Public comments:

- Use the "**Raise Hand**" function in the GoToWebinar toolbar, which should be located to the right of your screen as shown
- When staff call your name, please "**Unmute**" yourself by clicking the red button, and proceed to introduce yourself

Written comments can be submitted up to 12/15/22 5:00 PM at

https://ww2.arb.ca.gov/our-work/programs/cap-and-trade-program/cap-and-trade-meetings-workshops