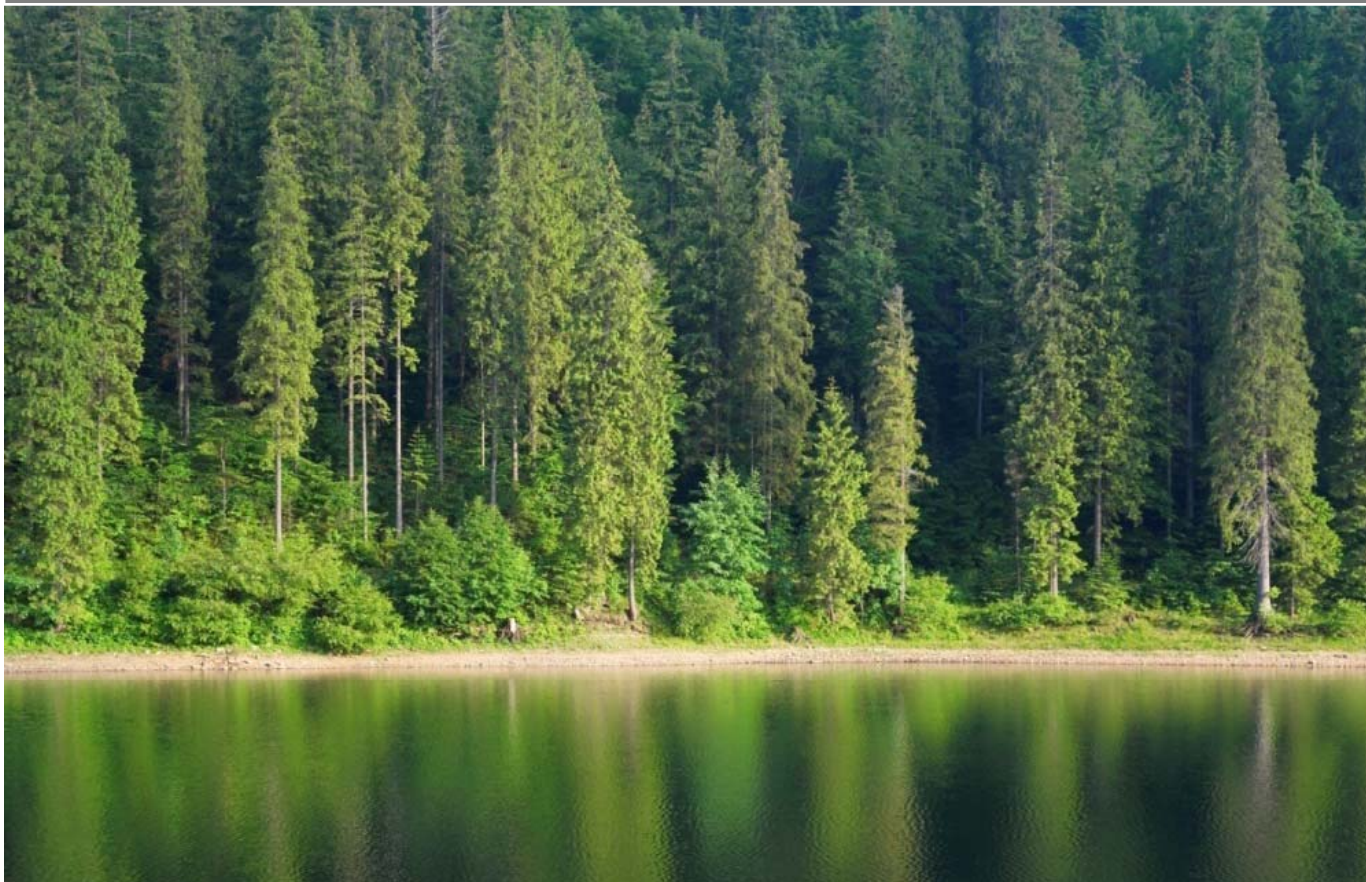




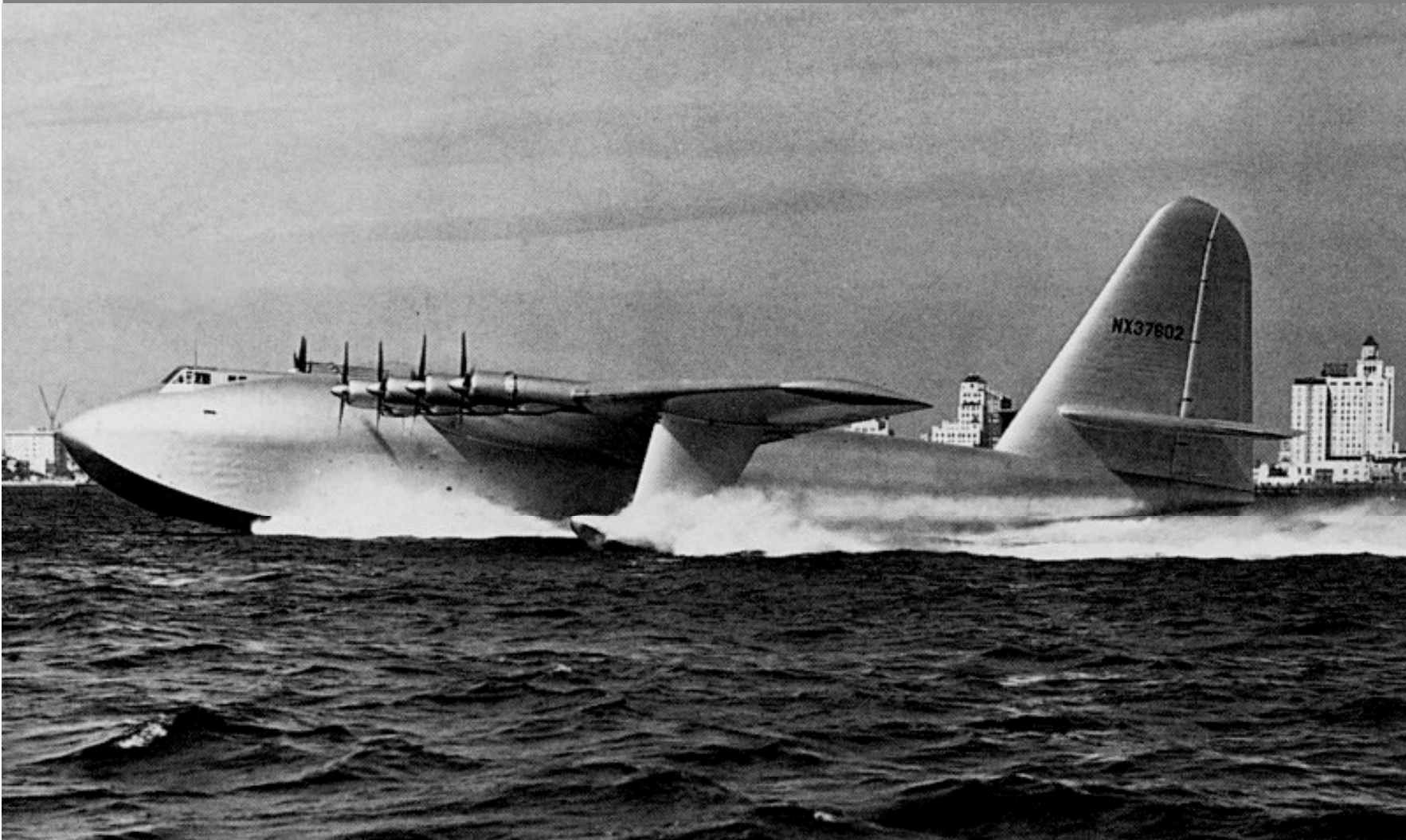
FINITE CARBON – AGGREGATION OVERVIEW



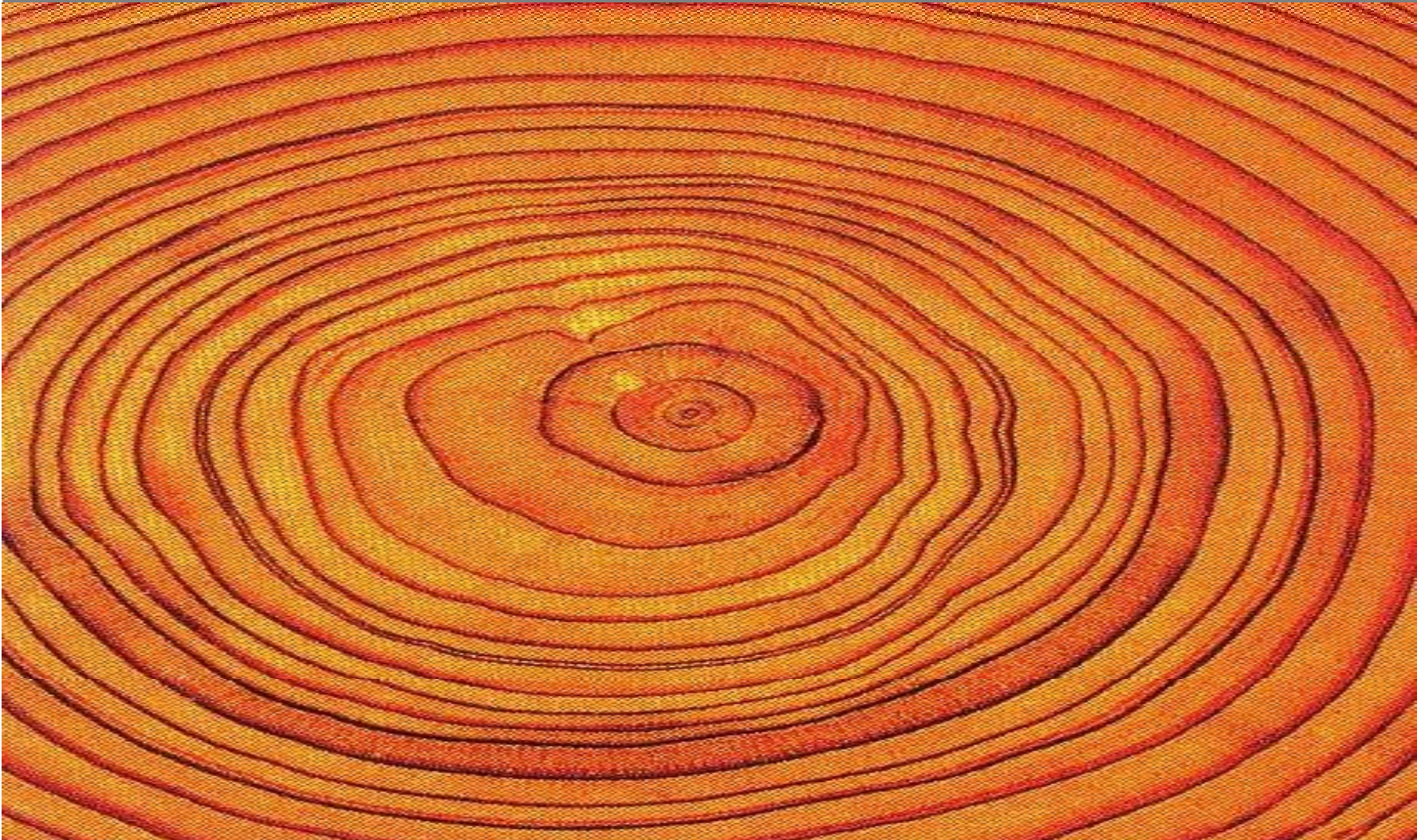
435 Devon Park Drive
700 Building
Wayne, PA 19087

www.finitecarbon.com

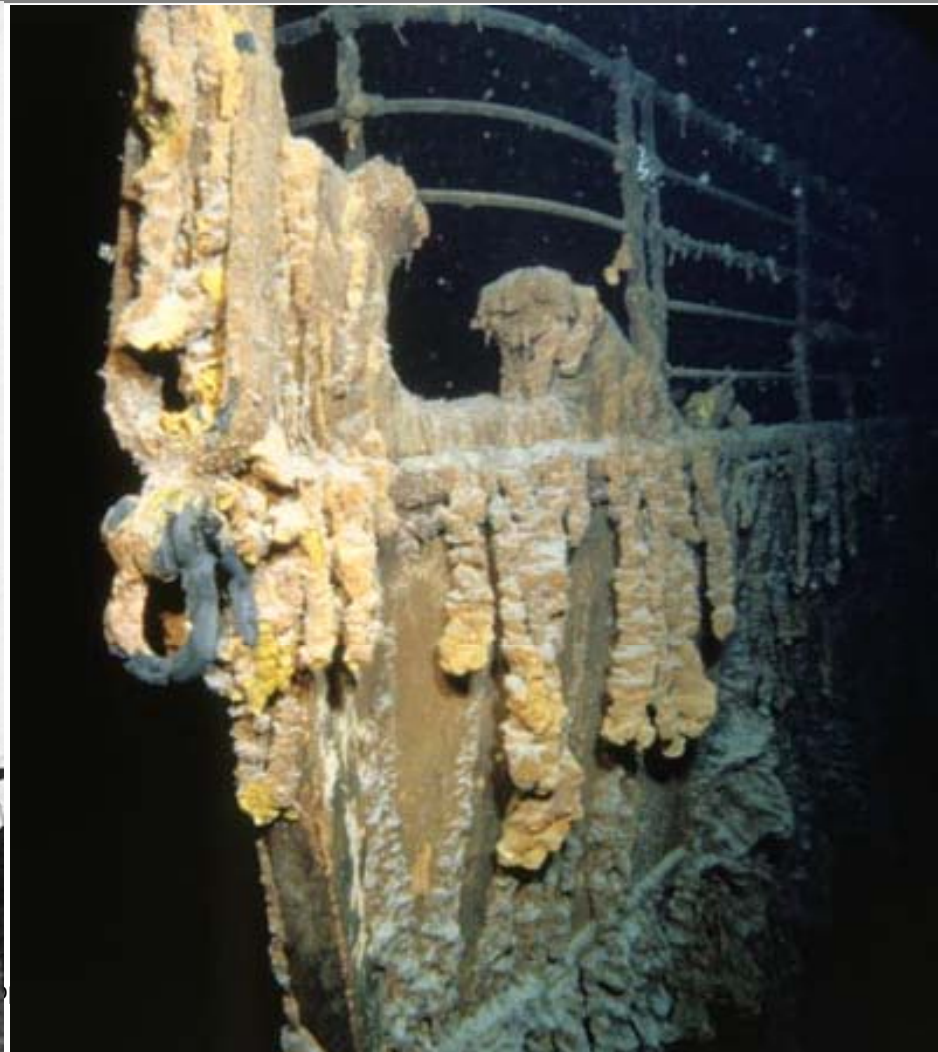
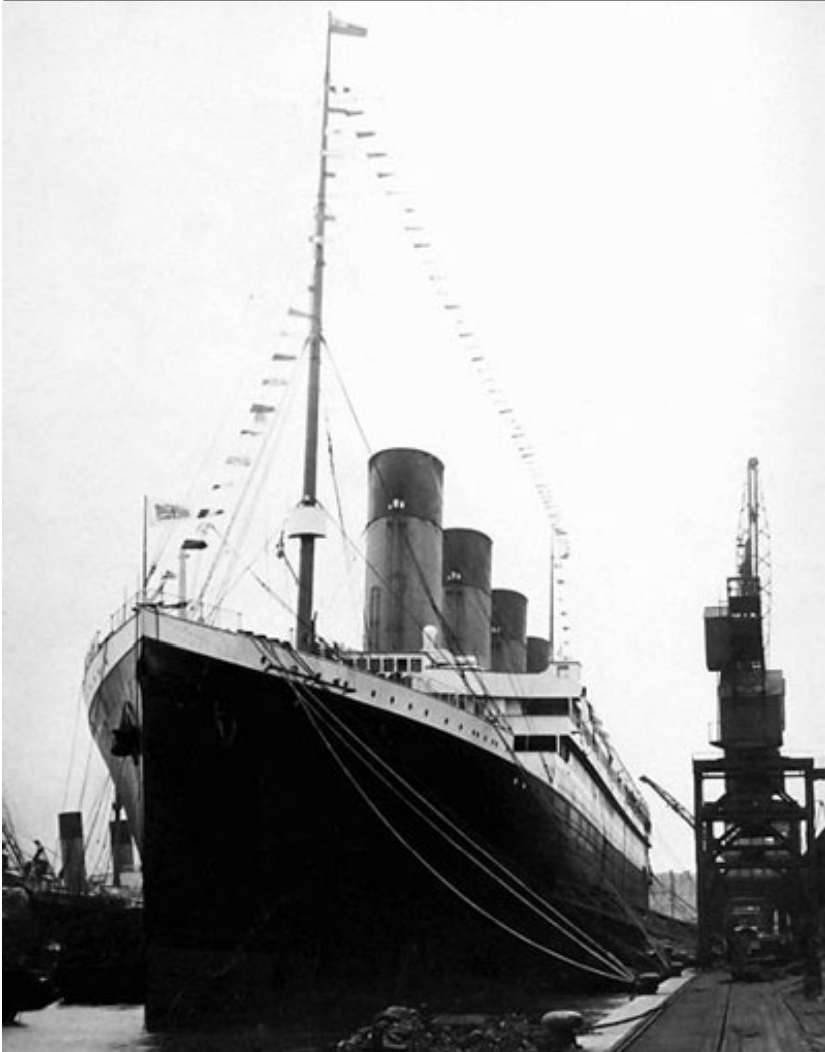
Will Aggregation Fly?



These Things I Know



These Things I Know



These Things I Know



These Things I Know



These Things I Know



Punchline

- Forest carbon aggregation is currently unworkable given the available framework:
 - Forest carbon projects are expensive to register.
 - Projects less than 5,000 acres produce relatively few offsets.
 - Require a permanent commitment for uncertain results.
 - Long term compliance costs are prohibitive.

FINITE CARBON BACKGROUND



About Finite Carbon

- Founded in 2009 to provide a single-source solution for creating and monetizing carbon offsets.
- Offers a comprehensive forest carbon project development and commercialization service including project design, inventory, modeling, verification, and monetization.
- **Finite Carbon has emerged as the largest forest carbon developer in the US**
 - Completed feasibility studies for over 3 million acres of forestland.
 - More than 200,000 acres of carbon projects under contract.
 - 12 forestry projects listed under the Climate Action Reserve (CAR).
 - 1 out of every 4 Improved Forest Management (IFM) projects listed on CAR is a Finite Carbon project.

Finite Carbon Team – Forestry



Matt Smith,
V.P., Forest Operations

- Two decades in forest operations at Forecon, Inc.
- Extensive forest carbon modeling under CAR, VCS, ACR and CCX programs
- SAF-certified forester
- Member of the Forest Carbon Education Group
- Member of the New York Forest Owners Association
- Member of the Forest Carbon Standards Committee
- B.S. degree in Forest Resource Management from the State University of New York College of Environmental Science and Forestry



Dylan Jenkins,
V.P., Portfolio Development

- Eight year veteran at The Nature Conservancy
- Responsible for the development and launch of *Working Woodlands*
- SAF-certified forester
- Named the 2006 SAF National Young Forester of the Year
- Member of the SAF National Committee on Forest Policy
- B.S. in Forest Management from Clemson , M.S. in Forest Management and Economics from Virginia Tech



Sterling Griffin,
V.P., Project Development

- Registered Professional Forester (#2805) in California
- Developed multiple forest carbon regulations including CAR and ACR
- Completed CCAR and CCX verifications of managed forest projects in North America and South America
- Graduated from the Purdue University School of Forestry



Tim McAbee,
Director, Project Development

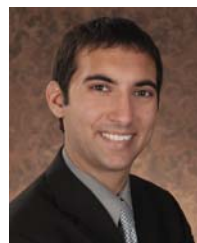
- Former LandMark Systems Eco-Markets Manager
- Lead consultant and project developer for both domestic and international TIMO projects
- B.S. in Forest Resource Management from SUNY ESF at Syracuse
- Served as an Infantryman in the New York Army National Guard for 5 years

Finite Carbon Team – Finance



Robert Verratti,
CEO

- Previous CEO experience at Traffic.com, National Media (NYSE), Total Care Systems, Inc. and Globe Ticket Company
- Currently serves as OE Waves, Inc. board chairman
- Board member of Finite Carbon Corporation
- Graduated from the U.S. Naval Academy and served in the nuclear submarine service



Sean Carney
President

- Carbon market veteran
- Former carbon broker at Cantor Fitzgerald
- Managed the financing and development of the third reforestation project in the world to be validated to the Climate, Community, and Biodiversity Standard (CCBS)
- Degree in business and environmental studies from the University of Southern California

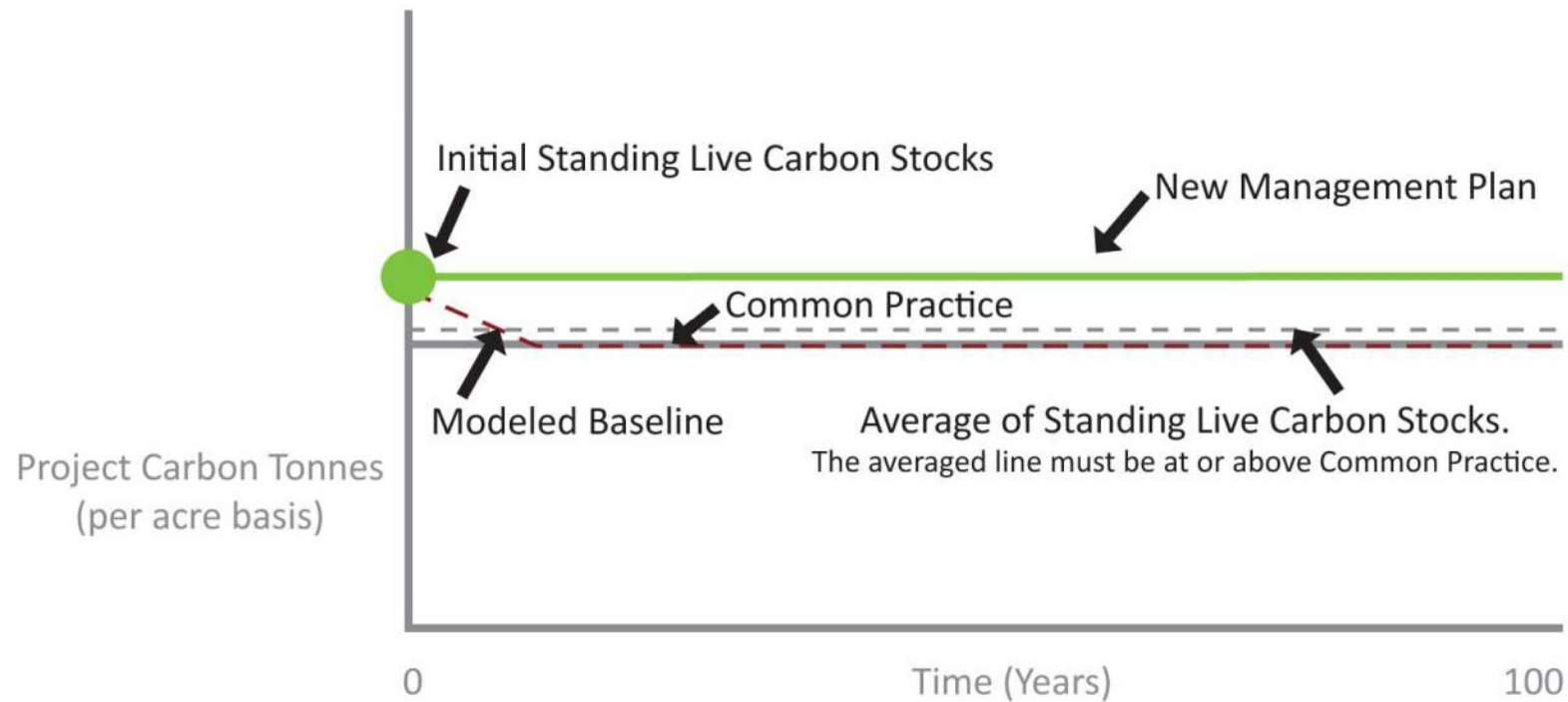
FOREST CARBON



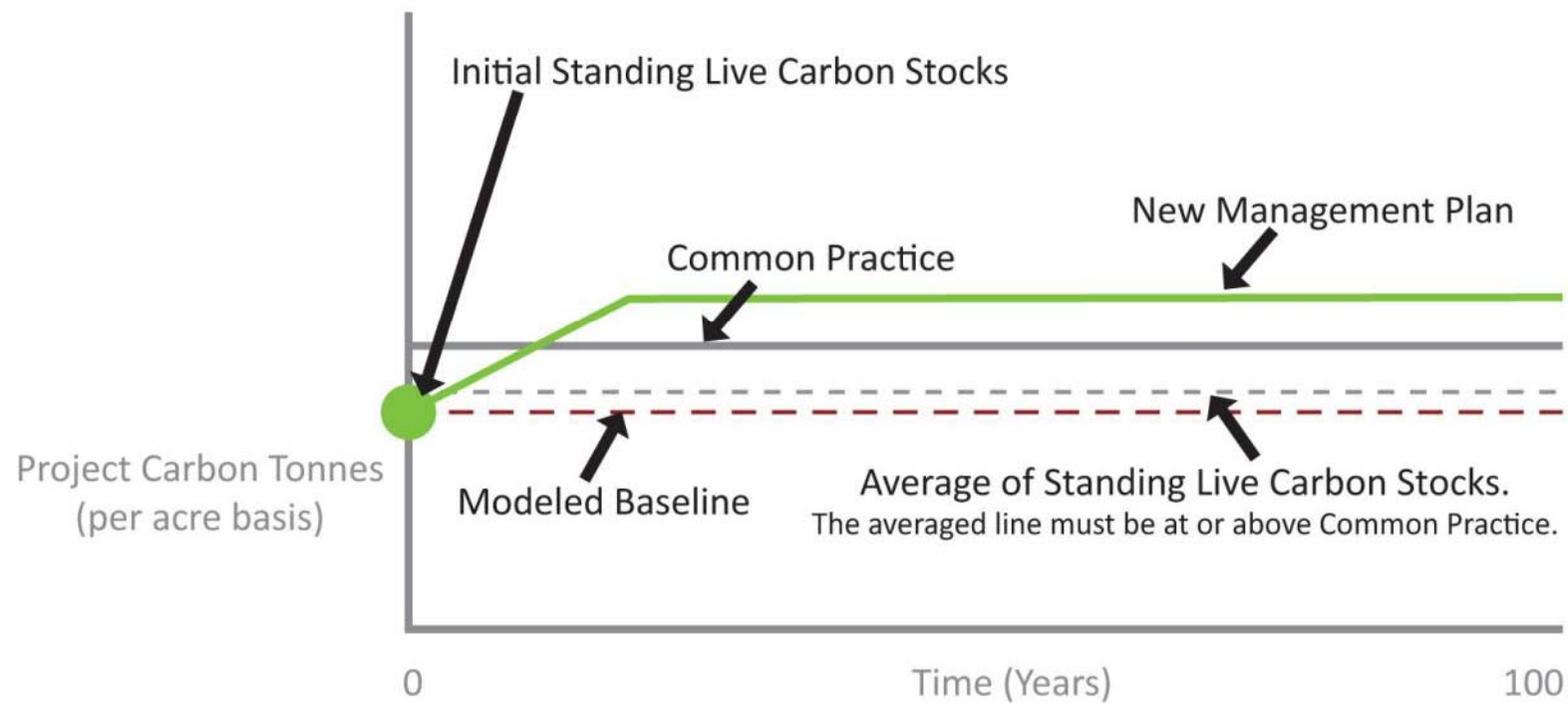
How A Forest Qualifies

- Offsets are issued in two ways under the rules for California:
 - For the maintaining a stocking level greater than the regional average.
 - For net annual growth (growth minus harvest).
- Projects above the regional average stocking level receive “stocking retention credits” in the first year.
- Projects below the regional average stocking receive “growth credits” over time.
- Projects can qualify for both stocking retention credits and growth credits.

Stocking Retention Credits



Growth Credits



AGGREGATION



Application

- Current Climate Action Reserve (CAR) aggregation guidelines are not accepted by the California Air Resources Board.
- Non-compliance grade offsets have minimal value.
- ARB must adopt aggregation policy for small landowners to participate.

Registration Expenses

- Although much less than larger projects, inventory, modeling, and verification costs are still significant barriers.
 - New inventory must almost always be performed to collect total tree height, merchantable tree height, standing dead trees, and saplings above 1 inch dbh.
 - Modeling costs likely to exceed \$20,000-25,000.
 - Verification costs of \$15,000-20,000.
 - Project documentation costs of \$10,000-15,000.
 - Legal fees for review of Project Implementation Agreement are likely to be excessive.
- No guarantee of registration.
- Changes in protocols can create significant unexpected costs (\$10,000-15,000+).
- Minimum costs of each aggregated project likely to exceed \$60,000.

Offset Production

- Annual carbon sequestration generally ranges from 0-4 offsets/acre/year in no-harvest management scenarios:
 - Northeast – 1-2 metric tons/acre/year.
 - Lake state and Appalachia – 1-2 tons/acre/year.
 - Southern states – 2-3 tons/acre/year.
 - California and Pacific Northwest – 2-4 tons/acre/year.
- With exceptions, stocking retention credits from well-stocked forests tend to be 5-15 tons per acre.
- An average 2,000 acre forest not harvesting timber can only expect 4,000 tons/year (less than \$40,000 at today's prices).

Uncertain Future

- Carbon markets are unpredictable by nature:
 - First phase of European carbon market collapsed to pennies from 30 euros in April 2006 to 10 euro cents in September 2007.
 - Chicago Climate Exchange prices fell from \$7.40 in June 2008 to 5 cents today.
 - Regional Greenhouse Gas Initiative allowances fell from over \$6.00 in 2008 to \$2.00 today.
 - Climate Action Reserve landfill offsets fell from \$10 in 2008 to \$1.00 today.
 - European offsets fell from 25+ euros in 2008 to 4.5 euros today.
 - VCS offsets fell from \$8.00 in 2008 to \$1.00+ today.
 - Gold standard offsets have fallen from \$15.00 to \$7.00 today.

Uncertain Future (cont)

- California program not guaranteed after 2020.
- Few buyers willing to extend purchase agreements after 2014.
- Compliance buyers include clause allowing them to cancel in case the market is suspended. PIA has no such clause.

Long Term Costs

- Signing a PIA locks a landowner into long-term costs over the next 100 years:
 - Account fee of \$500 every year.
 - On-site verification every 12 years (6 for non-aggregation projects).
 - Annual desk review of \$250-1,000 (not required for non-aggregation projects).
 - Annual reporting cost of approximately \$1,500 per year.
- Inventory savings for aggregation projects can be significant.
- Net Present Value of non-inventory costs does not differ significantly - \$190,000 for aggregation projects vs. \$210,000 for non-aggregation projects.
- If other participants in a pool drop out, landowner will have to convert to stand-alone project and will be subject to increased compliance costs, including inventory.
- Planning for a worst-case scenario is essential.

Poor Economics

- A 2,000 acre forest in California not harvesting timber:
 - 6,000 offsets per year at \$10 yields \$60,000.
 - Development costs of \$60,000.
 - NPV costs of \$190,000.
 - Needs a minimum of 5 years of a stable carbon market at or above \$10 to be profitable.
 - Potential skyrocketing inventory costs if aggregation pool defaults.
- A 2,000 acre forest 15 tons per acre above the average:
 - Profitable in the first year - \$300,000 of revenue vs. \$250,000 in costs.
 - A disruption in the carbon market would prevent landowner from harvesting below starting point for 100 years for \$50,000 in profit.
 - Potential skyrocketing inventory costs if aggregation pool defaults.

Invalidation

- Small landowners cannot manage invalidation risk.
- While it is an extremely small risk, the worst case scenario can cost landowner his land.
- The option of double verifying allows landowners to wait for invalidation period to sunset after three years, but doubles upfront verification costs.
- Market volatility within the 3 years may leave landowners without a financially viable project at time of sale.

Recommendations to Landowners

- Only enter into a project if you:
 - Will be profitable in the first year including NPV compliance costs OR have an iron-clad forward agreement with a credit-worthy buyer.
 - Ensure a dedicated endowment for compliance costs.
 - Assume you will have to comply with the inventory requirements of a stand-alone project and fund your endowment appropriately.
 - Fully understand the potential risks of invalidation.

RECOMMENDATIONS



Permanence

- 100-year permanence is a reality which landowners must stop fighting.
- Landowners should be protected by an “adverse legal opinion” and “regulation sunset” clause to allow them out of the commitment if the regulation is not renewed in 2020 or the program is ended prematurely by legal action.

Protocol Design

- Aggregation needs its own protocol:
 - Should balance rigor with accessibility.
 - Low cost, simple calculations.
 - High discounts for uncertainty to counter less precise data.
- Look-up tables can dramatically simplify the process, can be very accurate, and are already used by CAR to help determine stocking retention credits.

Cost Containment

- Compliance costs should be fixed by the registry.
- Landowners should contribute a fixed amount up-front to a pool. Possibly a percentage of offsets which are sold to fund it.
- Pooled money is used to spot check projects.
- Pool can grow through transaction fees charged only when offsets are sold.
- Future requirements should not be dependent on the actions of other participants.

Conclusion



Contact

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484-586-3092
scarney@finitecarbon.com