1. Is 100 years an arbitrary number? Or is there a basis for this amount of time? (I.e. Does it take vegetation and land that long to sequester carbon in the atmosphere?)

Brian: Scientists have found that the emissions by people of greenhouse gases like carbon dioxide are contributing to a destabilization of our planet’s climate. Climate scientists estimate that, when a metric ton of carbon dioxide is emitted through the burning of a fossil fuel like coal or oil, approximately 80% of the carbon dioxide is absorbed by the oceans or vegetation within 100 years, but approximately 20% remains in the atmosphere for 1,000 years. An offset is intended to fully balance a given volume of greenhouse gas emissions from fossil fuel use. When your trees sequester one additional metric ton of carbon dioxide, you are issued an offset, and a power company (for example) that purchases the offset purchases the right to emit one metric ton of carbon dioxide. Countries and states attempting to reduce greenhouse gas emissions have agreed that, for practical purposes, sequestration of carbon dioxide for 100 years can be considered “permanent” and fully balance a fossil fuel emission into the atmosphere. Therefore, for each carbon offset a landowner sells in the California market, that landowner must maintain one metric ton of carbon dioxide sequestered on their forest carbon project area for 100 years.

The 100-year permanence requirement does not preclude managing for both timber and carbon sales. A landowner can also terminate the project at any time, subject to compensating the system.

2. Forecasts predict that forests will be altered significantly by climate change resulting in migration north and up in elevation. This would most likely result in significant loss of carbon. Does the buffer pool cover this situation, especially with 100 year commitments?

Brian: The buffer pool covers any act of nature leading to destruction of obligated forest carbon, including wildfire and disease and drought-induced mortality, which would be the proximate agents of forest carbon destruction caused by climate change. The protocol does, as an aside, allow for the planting of non-native species if used as part of a strategy of climate change adaptation.

3. Please elaborate on the 100-year commitment: if the Tribe's management takes a long view, and the Tribe intends to keep these lands in Tribal ownership indefinitely (and is, in fact, reacquiring lands for this purpose), what are the concerns with a long-term commitment?

Nathan: Because of the historic loss of lands and access to resources, the Tribal membership is very sensitive to any land management decisions that may be perceived to limit access or impact resources. In the Yurok Tribe’s case, the Tribe was able to outreach with membership and address many of these concerns. Forest carbon projects are a relatively new idea and tribal governments need to be sensitive to concerns of tribal members. In many cases, it may simply
take education and outreach to generate a level of comfort with the idea of these projects and what types of land and resource use and of access are permissible.

**Brian:** It is true that Tribes are unique in their long-term planning horizon and that the 100-year permanence commitment does pose less of an issue for Tribes than for many other forest owners, and this is one reason Tribes are well positioned to benefit from the system. The main consideration relates to future land use flexibility – whether the Tribe wants to commit to maintaining a certain level of inventory on the project area for a hundred years, whether the Tribe has carved out all areas from the project area that might be considered for alternative uses (housing, for example). Many landowners are concerned with retaining an ability to respond to peaks in log prices with increased timber harvest; this can be managed in various ways in the context of a carbon project but does require careful attention and planning.

4. How do baselines account for climate change as it impacts increasing wildfire, insect and disease mortality into the future?

**Reserve:** Those impacts would be accounted for as unavoidable reversals, and would be compensated for through the buffer pool administered by CARB. All projects that are registered in the program must contribute a set percentage of credits issued to the buffer pool, which works as an insurance mechanism against such unavoidable impacts.

**Brian:** Baseline modeling does not have episodic events such as fire, storm damage, or pest outbreaks, related to climate change or not, incorporated in to them.

5. What are some examples of nuances associated with establishing a baseline on tribal lands? Also, do you have any comments for verifiers on verification considerations that may be different for tribal land projects?

**Nathan:** In the forest project protocols, there is no specific identification of the appropriate baseline for projects on tribal lands. Instead, the baseline determination is divided into the private lands or public lands baseline. Federal lands, such as those owned by the US Forest Service or BLM, are excluded from project eligibility at this time. Many tribal lands, however, are trust lands with title held by the United States. In addition, tribal governments may own fee lands. ARB has determined that the appropriate baseline for tribal projects is the private baseline.

Another consideration has to do with the appropriate regulatory scheme that applies tribal projects. Tribal lands may be held in trust or in fee and they may be located on a tribe’s reservation or off the reservation. Depending on how the land is held and where it is located, a different regulatory scheme may apply. This would need to be determined on a project by project basis. If various types of land are included in a single project, a tribe may choose to apply the strictest regulatory regime across the entire project for baseline calculations. This may simplify baseline modeling and assist verifiers by limiting the appropriate modeling constraints to a single regulatory regime.

**Brian:** Legal considerations affecting baseline modeling are frequently different on tribal lands than on non-tribal lands in the same region. It is important to note that BIA-approved forest management plans should not be considered a binding constraint on baseline modeling, as Tribes have broad discretion to change the content of such plans.
6. Question about creating the baseline inventory: We are preparing to conduct a timber harvest inventory on tracts totaling ~40,000 acres. One presenter stated the approach to conducting a harvest inventory is somewhat different than the inventory done for determining carbon credits. How can one find the timber survey criteria required and applicable for the carbon inventory so we can enable our contracted forester to perform the appropriate inventory and collect the appropriate data for a carbon baseline?

**Nathan:** Forest inventory criteria are provided in Appendix A of the US Forest Projects Compliance Protocol. While many of the techniques used will be familiar to timber cruisers, the carbon inventory is generally more comprehensive than a timber inventory because it is designed to determine the total amount of carbon sequestered on the land, not just harvestable commercial timber. It may be advisable to contract with a forester familiar with carbon inventory practices to conduct an initial orientation and training. The Yurok Tribe has familiarity with several experience carbon forest inventory cruisers and can help identify contacts.

**Brian:** The forest project protocol and associated documents can offer guidance on the standards necessary for a carbon inventory. There is no required inventory manual as the protocol allows some discretion in inventory design.

7. Yurok’s projects are on fee lands; Round Valley on trust lands. What would you say are the challenges with developing projects on Tribal trust lands as well as individual Indian allotments in trust status, many of which have tens to hundreds of fractionated-interest owners?

**Nathan:** At this point, projects on individual allotments are not feasible. The primary barrier is that the California Air Resources Board has not included project aggregation in the Forest Offset Protocol. This effectively prohibits small landowners from bundling into a single large project. Without such aggregation, the costs of developing a carbon project on small acreage landholdings is cost prohibitive.

**Brian:** We have not developed any projects on allotment land, and it would be very difficult to do so from a legal and risk management perspective. Trust land project development presented numerous unique issues – one issue I flagged in the webinar discussion was the lack of alignment between BIA, tribal and local county parcel and title records. We would be happy to discuss issues specific to trust land project development if you contact us.

8. In connection with either the Yurok Trust Land project, or the Round Valley project, did the Regional Solicitor issue any type of opinion regarding whether the respective projects were within the scope of 25 USC Section 81, and if so, can that opinion be shared with other tribes?

**Nathan:** The Yurok Tribe secured a letter from the US BIA relating to section 81 review, however it was peculiar to a specific project prior to its acquisition. Under 9th Circuit case law, section 81 review is limited to contracts involving presently held trust lands. For registration with ARB, however, the requirement is not related to section 81 review. Instead, under section 95975(l)(3) a tribe must provide proof of federal approval of participation in the Cap and Trade Program. The Yurok Tribe incorporated its carbon projects in its Forest Management Plan. BIA approval of that plan constituted approval of participation in the forest sequestration protocol. At least one other tribe has secured an approval form from BIA for its forest project.
Brian: A decision on whether to share that information rests with the tribes – we can put you in touch with tribal representatives on that question if you contact us, and of course contact Nathan regarding the Yurok Tribe’s comments on this issue.

9. How can tribes with smaller land bases in northern California participate in the California carbon credit market?

Nathan: A tribe with a small land base faces a formidable financial challenge in participating in forest offset projects. The size of a financially sustainable project will depend on the specific assessment area of the project, but without several thousand acres it will be difficult to get a project to pencil out. All projects require significant upfront investment and long term management costs. The upfront investment can be mitigated through use of a project developer, but these agreements generally terminate after a few years. A tribe must be prepared to assume significant long term costs to maintain the project.

Brian: It depends on the scale of the land base. Carbon project financial viability is related most directly to credit yield, rather than acreage; a project on 10,000 acres could yield more credits over a given period of time than a project on 100,000 acres depending on location and current stocking. It would likely be useful to contact a project developer for a credit yield assessment/feasibility study.

10. Can you deal with buyer liability with adequate reserves such that the tribe will provide substitute acreage in the event of a default?

Nathan: The Yurok Tribe would never substitute acreage in the event of a default of a sale to a purchaser. Under the Cap and Trade Regulations, buyers shoulder the risk of any invalidation of credits. Buyers of course will try to shift all risk onto the seller, but the seller should be wary of assuming risks that the regulations assign to the purchaser.

Brian: Under the CA cap and trade regulation, the end user of the offset must replace the offset to the Air Resources Board if that offset has been submitted for compliance and subsequently invalidated. Only if the end user is insolvent or bankrupt can the Air Resources Board compel the forest owner to replace the offset. Careful scrutiny should be given to offset credit transaction documents to avoid assumption by a tribe of contractual liability for invalidation. Regardless, reserving a percentage of a credit issuance until the invalidation period is over is advisable, as is reducing the invalidation period to three years from eight, which can be done by a second site verification with a second verifier.

11. How has BIA adapted to requests for carbon offsets (if at all)?

Nathan: BIA in the Pacific Region has been quite adaptive. It has been an education process, but the BIA has recognized the potential benefits to tribes where these projects complement their planned land management practices. Currently, the BIA’s response to proposed projects varies by region, though a national policy is anticipated.

Brian: To date the BIA regional offices have responded to requests for approvals related to CA offset projects.
12. Have there been any attempts by BIA to streamline the approval process – or is that the intent of the guidelines?

**Brian**: This depends on how the guidelines emerge – careful attention should be given to the guidelines and comments should be submitted to ensure that they align with the interests of Tribes participating in this market.

13. How many tribes are engaged in the process of certifying lands with CAR? Which ones? What stage of the process are they at?

**Reserve**: Currently, only the Yurok Tribe is actively working with the Reserve. The Yurok Tribe has registered and received credits for two projects: one under the Reserve’s Forest Project Protocol and one under ARB’s Compliance Offset Protocol.

14. Is there less value in credits the farther you get from California?

**Brian**: No, an ARB Offset Credit has the same market value regardless of location within the continental United States and Alaska. The transaction price of an offset credit can vary based on other criteria, however, including firm volume v. unit contingent delivery, invalidation liability, project developer and landowner credit quality, transaction volume, and other matters.

15. Can carbon credits be used for other land management/conversion projects? I.e. roadside carbon re-vegetation projects, grazing land to wetland, or protected wildlife habitat properties?

**Brian**: Other project types are under consideration for protocol development by the registries and ARB; you should contact ARB staff if you have an interest in a particular project type (e.g. freshwater wetlands).

16. With regard to project developers, we do not have any internal expertise on developing a project on our own and are wondering how the contracts with developers typically work. Are there developers that will simply come in and buy a project opportunity, and provide a certain revenue stream from the offsets generated? Interested in some description of the range of possible arrangements, and the profile of revenue that may vary based on that range of contractual arrangements.

**Nathan**: I would be available to discuss this. There many types of potential arrangements that would be difficult to summarize in the context of this q&a.

**Brian**: There are a wide range of contractual arrangements offered. We would recommend that you select a contractual arrangement that aligns incentives between the project developer and landowner – for example, if the project developer is purchasing credits from you, they have an incentive to pay the lowest price possible. If a project developer is receiving a portion of the credits as compensation, they have an incentive to sell their portion before your portion. You want the project developer incentivized to maximize your revenue. Transaction structure can meaningfully affect landowner revenue. Consider contacting project developers to get their ‘pitch’ so that you can evaluate alternatives.
17. What is the general timeline for developing a project? What is the typical span of time from initial conversations with a project developer to the point where the forest owner is seeing revenue from the first sale of credits?

**Nathan:** Projects can vary greatly in the amount of time to develop. One year would be the minimum amount of time needed to develop a project from initial conversations to issuance of credits. A timeline of two to three years is much more realistic.

**Brian:** At this point in the development of the market, once a landowner decides to proceed with a project, a typical timeline to project registration and ARB offset issuance is 12-15 months; it is possible but less likely to accomplish ARB offset issuance within 9 months.

---

**Contact the speakers here:**

Robert Z. Lee  
Climate Action Reserve  
**rzlee@climateactionreserve.org**

Nathan Voegeli  
Yurok Tribe  
**nvoegeli@yuroktribe.nsn.us**

Brian Shillinglaw  
New Forests – Forest Carbon Partners  
**bshillinglaw@newforests-us.com**

Michael-Corey F. Hinton  
Akin Gump Strauss Hauer & Feld LLP  
**mhinton@akingump.com**