TO: California Air Resources Board

RE: Requested Additions to the US Forest Protocol Guidance Document regarding Logical Management Unit and Even-Aged Adjacency Requirements

FROM: Brian Shillinglaw, New Forests Inc. (bshillinglaw@newforests-us.com)

DATE: August 5, 2015

We appreciate the opportunity to comment on the proposed guidance document for the ARB's US Forestry protocol. Below are two requested additions regarding even aged adjacency requirements and Logical Management Unit (LMU) definitions.

1. Even-aged adjacency requirements

The existing changes to the ARB Forest Protocol take some methods for determining stocking standards on even aged harvest units from The California Forest Practice Act (FPA) and corresponding regulations promulgated by the Board of Forestry and Fire Protection, but leave out some important pieces that need to also be incorporated. For example, the FPA allows for ocular inspection of either a single "least stocked area" or an "obviously stocked" area to determine whether stocking standards have been met following harvest. In these cases, sampling procedures may be waived. We recommend that ARB develop guidance that aligns with the FPA and allows a third-party accredited verifier to waive sampling if they determine on the basis of an ocular inspection of either a "least stocked area" or "obviously stocked" area that stocking standards have been met.

Background

The purpose of the stocking sampling procedures in the FPA (PRC Div. 4, Ch. 8) and Regulations (CCR Title 14, Ch. 4, 4.5, 10) is to ensure that the minimum stocking requirements are being met on the ground. In the context of even-aged adjacency requirements to ensure minimum green-up is occurring, then the stocking sampling procedures are used to determine either point count or minimum age criteria are met, along with a minimum spatial distribution on the unit under consideration.

PRC 4587(b) directs the Board (of Forestry and Fire Protection) to adopt regulations for waiving a formal sampling procedure.

> **(b)** Notwithstanding subdivision (a), the board shall adopt regulations which specify the conditions and manner in which the necessity of employing sampling procedures may be waived. The regulations shall provide that, in addition to any other possible conditions which may be required by the board, the standard sampling procedures may be waived only if the director or the director's representative and the timber owner or a registered professional forester acting as the owner's agent, agree that the area is adequately stocked to meet the standards of this chapter and any applicable rules or regulations of the board. The regulations shall require that, if the director or the director's representative does not agree that the area is so stocked, a standardized sample shall be required.

Section 1072(d), Stocking Sampling Procedures, of the Regulations provides for a "Waiver Request Procedure".

(d) Waiver Request Procedure: This procedure may be used to request from the Director a waiver of sampling procedures provided in 14 CCR 1072 (a), (b), or (c) where, based upon an RPF's, an RPF supervised designee's, or owner of timberland's inspection, he/she has determined that the stocking requirements of the Act and rules have obviously been met.

Section 1072.1, Number of Plots Required, encourages the use of the least stocked 40 acres as identified by ocular estimation. The theory is that if this least stocked area passes the stocking requirements, then the rest of the areas will as well. The inspector may independently agree or identify another area that is least stocked.

Proposed Guidance Language

The California Forest Practice Act and Regulations allow for the determination of adequate stocking using the concepts of the "least stocked area" (defined as 40 acres) and "obviously stocked". In the event of uncertainty or disagreement regarding the sufficiency of stocking, a sampling procedure is then used.

Least stocked area

During site verification, the OPO may propose a "least stocked area" for inspection by the third-party accredited verifier. If the verifier conducts an onsite ocular inspection of the area and agrees that in their professional judgment the area has met the stocking requirements, then that unit may be used to determine total stocking requirements for purposes of even-aged adjacency under the Forest Protocol. To ensure that the stocking method (point count, basal area, combination) has not been altered over time by growth or mortality, the least stocked unit should not generally be more than 10 year old unless demonstrated that no substantial changes have occurred.

Obviously stocked

During site verification, the OPO may propose to show that a unit is "obviously stocked". If the verifier inspects the unit and agrees that a unit is "obviously stocked" then that unit may be considered stocked for purposes of even-age adjacency requirements under the Forest Protocol. If that unit was also the agreed to be "least stocked unit" then even-aged adjacency has been demonstrated.

Sampling procedure

If the verifier cannot determine with reasonable assurance using one of the ocular inspections above that the stocking standards have been, then the verifier must conduct data checks on the sampling procedure undertaken by the OPO/APD. Consistent with the application in the Forest Practice Rules, the OPO/APD should install the stocking sample pursuant to the procedures outlined in Section 8.1(b)(2)(E), and the verifier should perform data checks on the sample to confirm with reasonable assurance that the point count standard and/or the residual basal area standard described in Section 3.1(a)(4)(D)(1) and Section 3.1(a)(4)(D)(2) of the Protocol have been met.

2. LMU definition clarifications

Summary

The Logical Management Unit (LMU) definition in Section 1.2 is somewhat ambiguous and would benefit from additional explanation and the inclusion of examples to help clarify its intent. We have suggested specific language below that could be added to the guidance document to help stakeholders more easily identify and delineate an LMU for the purposes of implementing Section 5.2.1 of the Forest Protocol.

Current Language

"Logical Management Unit" or "LMU" means all land that the forest owner(s) and its affiliate(s) either own in fee or hold timber rights on and that are within the same assessment area(s) where the project is located. An LMU may be further defined by its unique biological, geographical, and/or geological attributes, delimited by watershed boundaries and/or elevational zones, and/or unique road networks, and/or an area that has experienced natural disturbance such as wildfire or windstorm, and/or areas designated as High Conservation Value Forest (HCVF) by a state agency with jurisdiction over the project area or as identified by the forest owner's Forest Stewardship Council (FSC), Sustainable Forestry Initiative (SFI), or Tree Farm certification.

Proposed Language for Guidance Document

An LMU does not necessarily have to include all land that the forest owner(s) and its affiliate(s) either own in fee or hold timber rights on and that are within the same assessment area(s) where the project is located if it can be demonstrated that a subset of the ownership may be further defined by one or more of the following criteria which are provided in the LMU definition in Section 1.2 of the Protocol. Some examples of how these criteria may be interpreted are described in greater detail below to assist in implementation of section 5.2.1; however, this list should not be considered complete or exhaustive:

- Biological: may include different forests types, size classes and densities.
- Geographical: may include contiguous management units such that non-contiguous areas are excluded, riparian forest along the edges of streams vs. upland forest, etc.
- Geological: may include different soil types or significant soil characteristics such as substantial differences in productivity, root barriers (hardpan) or water tables.
- Watershed boundaries: may be delineated using the drainage basins of specific waterbodies or previously defined and established watershed boundaries such as USGS hydrologic units or state watershed boundaries.
- Elevational zones: may be delineated using topographical maps, contour lines, digital elevation models, LiDAR, etc. In areas where aspect significantly affects vegetation than the elevational zones may vary by aspect.
- Unique road networks: may include roads that provide access to particular areas of an ownership for certain management purposes or functions.

Areas that have experienced natural disturbance: may be delineated using state or local maps (such as fire perimeter maps), on-the-ground mapping, or historic remote sensing data.

High Conservation Value Forest (HCVF): may include, for example 1) areas covered by conservation easements that were funded and/or held by a state agency with jurisdiction over the project area, 2) areas that are similar to or representative of areas that have been described in a state agency report, study or regulation as having important ecological characteristics or functions such as wildlife habitat or water provisioning, or 3) areas that have been described as having high conservation value in the management plan approved as part of FSC, SFI or Tree Farm certification.

Background

The Climate Action Reserve added equations 6.5 and 6.6 and the definition of Logical Management Unit after the issuance of version 3.0 of the CAR protocol. In our understanding, this was in part out of a concern that projects could systematically select projects on higher stocked areas that did not reflect average inventory stocks on such landholdings. These changes reflected in part the theory that the selection of higher stocked ground within land ownerships for projects would tend to be biased towards timber stands that could not in reality be harvested – even in light of the other elements of the protocol that screen for such projects, such as the financial and legal feasibility criteria.

We believe that this theory does not accurately reflect the many varied reasons why ownerships can include higher stocked ground that may be commercially viable to harvest but which a landowner would wish to enroll in a carbon project, either for conservation or for economic reasons. Please consider the following examples of situations where higher stocked areas may exist within larger timberland ownerships, be legally and commercially feasible to harvest, and therefore be legitimate candidates for separate project areas that are truly additional:

- *Areas where materially different forest types are included in the same assessment area.* For example, the MS River Delta supersection does not distinguish assessment areas between pine plantations and bottomland hardwoods. It is common for timberland ownerships in the region to include both pine plantations for pulp or pellets and bottomland hardwoods for other markets. Typically, the bottomland hardwoods areas carry higher inventories as these are longer-lived species that are frequently managed for sawlog production. The hardwoods are commercially managed forests but simply carry higher inventory than pine plantations due to the forest type and product markets. Under the proposed protocol changes, a landowner could not select higher-stocked bottomland hardwoods out of an integrated pine/hardwoods timberland ownership for a project.
- *Areas where higher stocking is an artefact of historical management*. For example, the old-growth California coastal redwood forests were harvested at different times depending on location and slope as logging technology developed. The flat alluvial plains close to the ocean were harvested first; later technologies enabled the logging of ground higher upriver and eventually steep slopes. Thus inventory on redwood ground is still frequently affected today by historical logging progression; few forests are in a fully-regulated state. If a landowner wished to enroll a carbon project on land that had higher stocking simply because it was harvested earlier in the original wave of logging, and such

land is today demonstrably commercially harvestable, is there any reason not to allow such a project to proceed?

- *Forests that include stands with a diverse range of harvest and haul costs and where landowners are normal economic actors.* Most forests include a range of species types with different market values and a range of stands with varying harvest and haul costs, influenced by factors such as slope and haul distance from a mill. Log markets are cyclical, influenced strongly by housing starts and export demand. In a given 5-12 year period log prices can vary by 100%, 200% or more. In this context a rational revenue-maximizing landowner faces a range of profit margins on different stands with different species and harvest and haul costs. That landowner will likely choose to harvest land with higher value species or with lower harvest and haul costs during periods of low or moderate log prices, and only harvest areas with lower value tree species or higher harvest and haul costs during brief peaks in log prices. In such conditions inventory builds up in the areas with higher harvest and haul costs (e.g. more remote areas, areas that must be cable or helicopter logged). This occurs as a natural result of landowners behaving rationally in the context of volatile commodity markets. These areas are legally and financially feasible to harvest, they get harvested during log price peaks, but they are precisely the areas where the value generated by the carbon price can most easily exceed the value generated by log harvest. An emissions trading market is designed to encourage the identification of the lowest-cost emissions reductions, and these are the lowest cost emissions reductions in the forest sector. Is there any reason why the protocol should preclude the enrollment of the lower-margin, higher harvest and haul cost areas within a larger timberland ownership?

Each of the examples above illustrates a situation in which a larger forest landholding may have higher-stocked areas that may be legitimately enrolled as a separate project area and still be additional to a conservative, business as usual baseline management of that area. There are many reasons why forest ownerships can include higher stocked and lower stocked areas, and the selection of such areas for projects is not likely to be biased towards *de facto* non-additional forest stands.

The current LMU definition allows for defining LMUs based on a number of criteria, including biological, geographical and geological factors. We suggest providing additional guidance within the guidance document that clarifies the intent of this language and facilitates its implementation.