



Forest Assessment Areas

Introduction

Assessment areas are used in the Climate Action Reserve's (Reserve) Forest Project Protocol (FPP) to provide standardized regional data for project development. An assessment area is generally defined as a forest vegetation community that shares common environmental, economical, and regulatory attributes.

Appendix F of the FPP provides data, by assessment area, necessary to calibrate and/or implement project accounting, including:

- Common Practice – The average carbon stocks (metric tonnes) of the above ground portion of live trees on private lands. The average carbon stock is the result of the suite of management activities within the assessment area. The common practice value is the extent to which improved forest management projects can receive credit for avoided emissions. (See Section 6.2 of the FPP.)
- Diversity Index – The maximum amount (by carbon percentage) of any one native species allowed within a project. (See Section 3.9.2 of the FPP.)
- The fire risk rating (see Appendix D of the FPP).
- The rotation age commonly used in the assessment area and the value of harvest for incorporating in a financial test for reforestation projects (see Appendix E of the FPP).
- The mill efficiency used for calculating wood products (see Appendix C of the FPP).
- The wood product classes generated for calculating wood products values (see Appendix C of the FPP).

Defining Assessment Areas

The U.S. Forest Service Forest Inventory and Analysis Program (FIA) is the basis for development of assessment areas. The FIA program collects data on U.S. forests using an extensive array of coordinated sample plots throughout the nation. Together the plots comprise a national inventory system designed to assess the state of U.S. forests on an ongoing basis. The hierarchical and spatial nature of FIA data make it possible to group sample field plots by geographical location. FIA plots are assigned an attribute referred to as 'forest type' that identifies the dominant vegetation present at the plot. Forest Types were combined by the Reserve into forest

communities following a process described further below. An assessment area is a forest community within a defined geographical unit. The geographical units are discussed below.

In 2007, the U.S. Forest Service designated ecosections for the U.S. based on analysis of physical and biological components with the aim of identifying and mapping land areas that represent unique ecological regions.¹ Ecosections are spatial units and can be mapped (<http://svinetfc4.fs.fed.us/research/section/index.html>). The geographical units that contain assessment areas are based on individual ecosections or combined ecosections (called supersections – a term coined for this project). Supersections were created in order to stratify the plots into high site class and low site class (where possible) and to increase the statistical reliability of the common practice estimates derived for each assessment area. The combination of ecosections into supersections only occurred where adjacent ecosections share similar environmental, economic, and regulatory attributes.

Ecosections are combined into supersections if:

1. The ecosections are adjacent to each other.
2. They share a similar distribution of plots by forest types, which indicates that the ecosections share similar climate, elevation, and other environmental variables.
3. The economics of forest management are similar between the ecosections. The criteria considered to determine economic commonality between ecosections include forest product generation, transportation networks, forest product mill types, and wood products markets. This was based on professional knowledge of regional timber markets.
4. Regulations between ecosections are relatively homogeneous across ecosection boundaries. Ecosections are not combined into supersections in cases where forest practice regulations between adjoining administrative units are known to be markedly different.

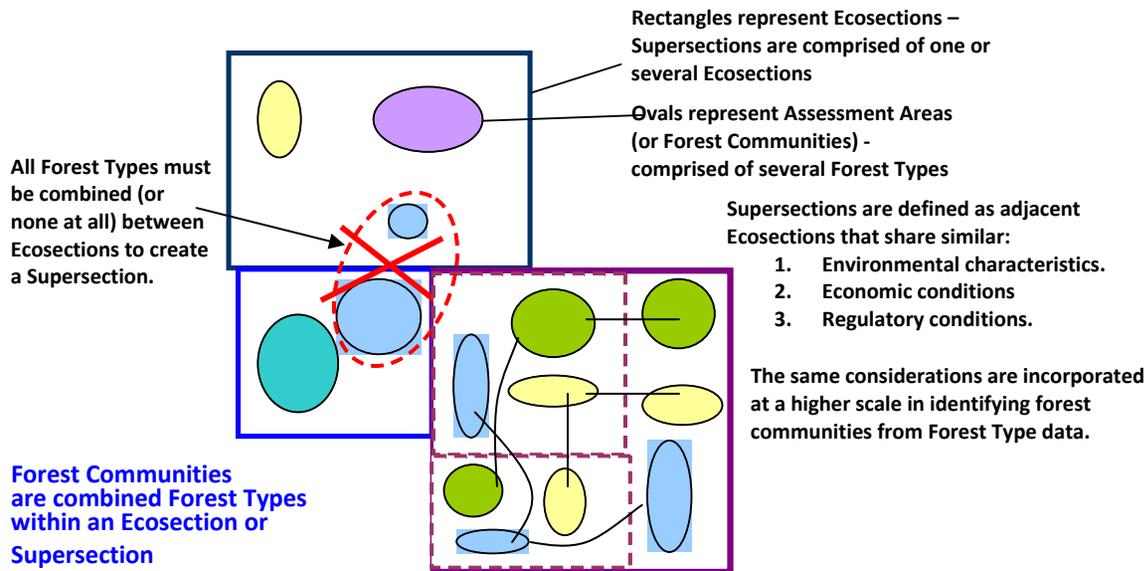
The Forest Service computed the statistics for the combined forest types aggregated at the supersection level and disaggregated at the ecosection level. The statistics are reported on a per acre basis and include board foot volume, basal area (square feet), above ground carbon tonnes, and the sampling error. Ecosections were not combined into supersections if the aggregation changed average standing carbon stocks of any assessment areas by more than 10%, indicating that there are environmental, economic or regulatory differences affecting the forest stocks within these communities.

The aggregation of forest types into forest communities that define assessment areas is based on the natural forest communities found within the ecosections rather than the presence of a single dominant species as in plantation management. As an example, the Northwest Coast Range contains many forest holdings of intensively managed Douglas-fir forests, yet the natural forest community contains many other species such as western hemlock, Sitka spruce, and red alder, among others. The plots used to define the

¹ USDA FS 2007, Description of Ecological Subregions: Sections of the Conterminous United States, GTR WO-76B, (http://svinetfc4.fs.fed.us/research/section/GTR_WO-76B.pdf).

assessment area, as well as the common practice statistic, are the entire set of plots found in the natural forest community. No effort is made to isolate assessment areas based on the existence of plantations. Successional stage, including the presence of shade tolerance species, and management influence on species prevalence is not a basis for stratifying distinct communities. Appendix F displays the associations of forest species (forest types) and assessment areas for all of the ecosections and supersections.

Figure 1 summarizes conceptually the methodology for delineating assessment areas.



Assessment Areas (or Forest Communities) may occur in a single Ecosection (purple, turquoise, and green examples) or may occur in multiple Ecosections (light yellow and light blue examples). Connected lines show how Assessment Areas can be developed from combined Ecosections

Figure 1. Schematic of Process to Define Assessment Areas