

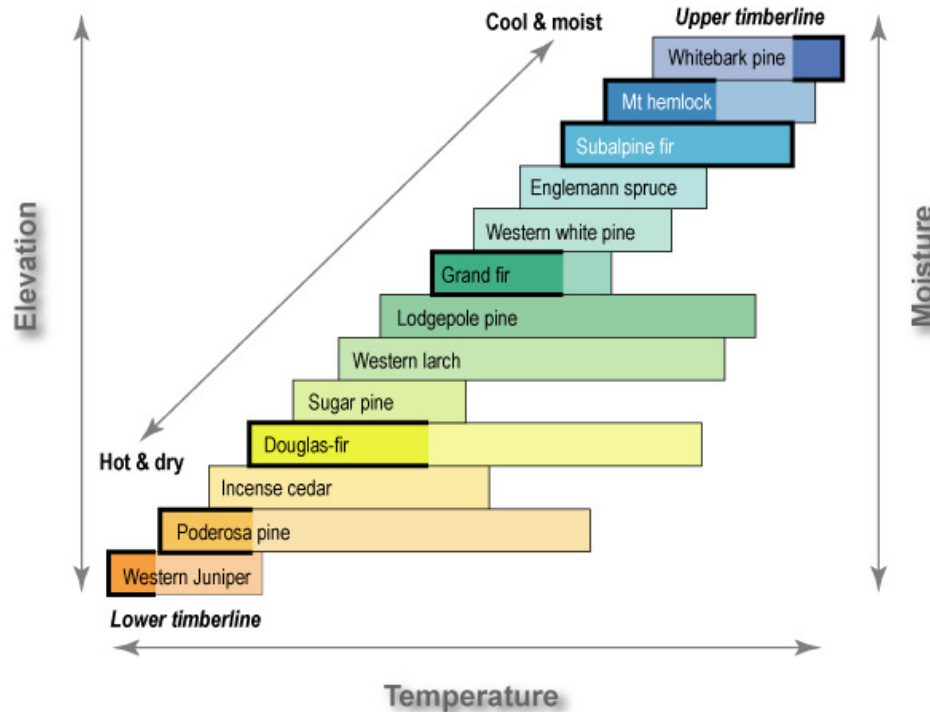
## Appendix 5: Biophysical Environments

Biophysical environments provide a system to group plant communities and environmental conditions based upon plant associations, temperature and moisture. Biophysical environments are sites with similar characteristics and responses in relation to disturbance events. They provide the foundation for deriving the historic range of variability for vegetation within a watershed.

Within eastern Oregon, plant associations are based on “Plant Associations of the Wallowa-Snake Province” (Johnson and Simon, 1987) using potential plant associations as a basis. Forest types are assigned according to the biophysical environment classification adopted by the Interior Columbia Basin Ecosystem Management Project (ICBEMP).

Temperature and moisture groups are a relative indicator of the climatic conditions of a given site. Temperature classifications are described as hot, warm, cool, and cold; indicating the relative temperature characteristics of a site. Moisture classifications range from dry to wet indicating the relative moisture of a given site.

This system categorizes the biophysical environments of an ecosystem into a scale ranging from G1 (group 1) through G9 transitioning from cold and wet high elevation environments to hot and dry low elevation environments. The figure below produced by OSU Extension Service (Emmingham, 2005) illustrates this concept with reference to tree species occurring in Eastern Oregon.



Each of these biophysical environments has certain characteristics such as soil content, aspect, moisture, and temperature that are historically adapted to supporting a certain continuum of

plants. This continuum is not static or homogenous. It fluctuates within the biophysical environment based on the frequency and severity of disturbance events and through the natural succession of plants.

The forested lands within the Upper Joseph Creek Watershed are dominated by warm dry Ponderosa pine – Douglas fir stands (G7) in the south and cool dry Grand fir (G4) stands in the north. Together these two forest types comprise 59% of the forested land base within federal ownership.

Management prescriptions should respond to the specific biophysical attributes of each site, as well as the legacy of past management action which was fairly uniform across biophysical environments (e.g. overstory removal and fire suppression).

**Forest Cover Types by Biophysical Group and Seral Stage within the Upper Joseph Creek Watershed**

Biophysical Group	Early Seral	Mid Seral	Late Seral
G4 (Cool Dry)	PP, DF, WL, LP	ES, DF, WL	GF, ES
G5 (Warm Dry)	PP	DF, PP	GF, DF
G6 (Warm Moist)	PP	DF, PP	DF
G7 (Warm Dry)	PP	DF, PP	DF
G8 (Hot Dry)	PP	PP	PP

<b>Forest Cover Types:</b>	PP – Ponderosa Pine	DF – Douglas-fir
	WL – Western Larch	LP – Lodgepole Pine
	GF – Grand Fir (& White Fir)	ES – Englemann Spruce