









Likely Climate Trends and Consequences for the Rogue Valley

TEMPERATURE¹		Summer = June to Aug; Winter = Dec to Feb	Projections for 2035 - 2045	Projections for 2075-2085
		Average Annual Increase	1.5 to 4 ^o F	4.3 to 8.2 ^o F
		Average Summer Increase	1 to 6 ^o F	5.6 to 11.8 ^o F
		August Increase	1 to 7.5 ^o F	6.7 to 16.8 ^o F
		Average Winter Increase	1 to 3.5 ^o F	3.4 to 6.3 ^o F
PRECIPITATION¹		Summer = June to Aug; Winter = Dec to Feb	Projections for 2035 - 2045	Projections for 2075-2085
		Average annual change	-4.46 to +0.04 inches	-5.56 to +11.81 inches
		Average summer change	-0.65 to -0.34 inches	-0.75 to -0.12 inches
		Average winter change	+0.33 to +1.83 inches	-0.40 to + 5.67 inches
SNOWFALL²		Rising temperatures will likely cause precipitation to fall as rain at lower elevations rather than as snow on peaks so average January snowpack will decrease; by 2035 – 2045 snowpack may be reduced 60 – 65% and by 2075 – 2085 as much as 90%. This will likely reduce run-off during late summer / fall and substantially reduce available irrigation and drinking water.		
SEVERE WEATHER²		Weather variability is likely to increase as both wet and dry cycles are likely to increase in length and severity. Many more days are likely to exceed 90 ^o F and 100 ^o F while more heavy rainfall days are likely. More precipitation falling as rain at low elevations rather than snow at high elevations is likely to increased flash flood frequency in Winter and Spring.		
WILDFIRES²		Longer droughts and higher temperatures with more intense heat waves will likely increase substantially the amount of (vegetation) forest lost to wildfire.		
VEGETATION²		With warming and drying, climatic conditions will likely become more appropriate for deciduous forest communities such as oaks and other hardwoods while conditions for higher elevation spruce/fir/hemlock communities will be severely compromised and those for Douglas fir will likely be reduced in area. Grassland and scrubland conditions are likely to expand as forest conditions diminish.		
NATIVE AQUATIC SYSTEMS²		With increases in storms and fires, enhanced soil erosion will likely cause greater stream sediment and mineral build-up. Increased summer air temperatures will elevate water temperatures reducing critical dissolved oxygen concentrations and potentially enhancing bacterial and disease conditions. Reduced snowpack and earlier snowmelt will likely modify current stream flow patterns. With warmer water temperatures earlier aquatic insect emergence is probable, compromising historic food availability pulses for migratory fish. Reduction in conditions for many native fish species may be accompanied by range expansion of non-native species.		
NATIVE TERRESTRIAL SYSTEMS²		Probable increase in wildfires and lengthened fire seasons may induce dramatic shifts in vegetation communities towards more fire-adapted associations. Both invasive and non-native species abundances may be enhanced as natives are reduced. Particularly at risk are mature forests and the wildlife species they support as well as amphibians which will have limited dispersal capacity conditions become dryer. Disruption of synchronicity is likely between insect development and nesting / hatching particularly of migrant bird species. Bark beetle conditions will be enhanced, increasing the threat to native forests.		

¹ Compiled by Alan Journet, Ph.D., K. A. CONJOUR Consulting, 2011. (http://kaconjour.com/Consulting/KAConJour_Consulting.htm), using data provided by the Geos Institute (Ashland, OR) obtained from the MAPSS team of the USFS Pacific Northwest Research Station (Corvallis, OR) based on three General Circulation Models (HADLEY, MIROC, and CSIRO). Future conditions are compared to the historical (1961-1990) average.

² Largely Doppelt, B., Hamilton, R., Deacon Williams, C., Koopman, M., 2008. *Preparing for Climate Change in the Rogue River Basin of Southwest Oregon*; Prepared by: The Climate Leadership Initiative, The National Center for Conservation Science and Policy (now Geos Institute), and MAPSS Team at the USDA Forest Service Pacific Northwest Research Station. http://www.geosinstitute.org/images/stories/pdfs/Publications/ClimateWise/ROGUEWORKSHOP_FINALsinglewebsite.pdf