



**Figure 2.** Maximum air and water Temperatures observed along the Grande Ronde River between 06/19/07 and 06/26/07 plotted against the date; dates are listed from upstream to downstream. Tributaries are labeled with the river mile at which they intersect the mainstem.

\* As illustrated in Figure 2 the maximum daily water temperature readings in the Grande Ronde River were found to be highly correlated with the maximum daily ambient air temperatures. The River Continuum Concept predicted that there would be a continual change in observed water temperature as we moved towards the mouth of the river. This predicted trend was not apparent, likely due to a cool air front observed from June 23 to June 26. Cooler maximum daily air temperatures caused the water temperatures to be colder than expected.

To create Figure 2, ambient air temperature was measured at each site and at other key points during the day. The maximum temperature observed over the course of the day was then recorded as the maximum ambient air temperature for that day. One of the limitations of this methodology is that it is quite possible that the maximum ambient air temperature occurred at a time when a measurement was not being taken, and many of the ambient air temperature readings were taken under riparian cover and thus not exposed to the full impact of solar radiation. The maximum daily water temperatures were taken from the data collected by taking measurements every half hour with a thermistor, except for the reading taken at the Upper Grande Ronde at river mile 172.8, which was observed with a YSI multimeter at 11:23am, and is thus most likely a low estimate. Potted tributary temperatures are the maximum observed values. Tributary water temperature measurements were typically taken in the morning and are thus likely cooler than actual maximum readings, which generally occurred in the late afternoon.