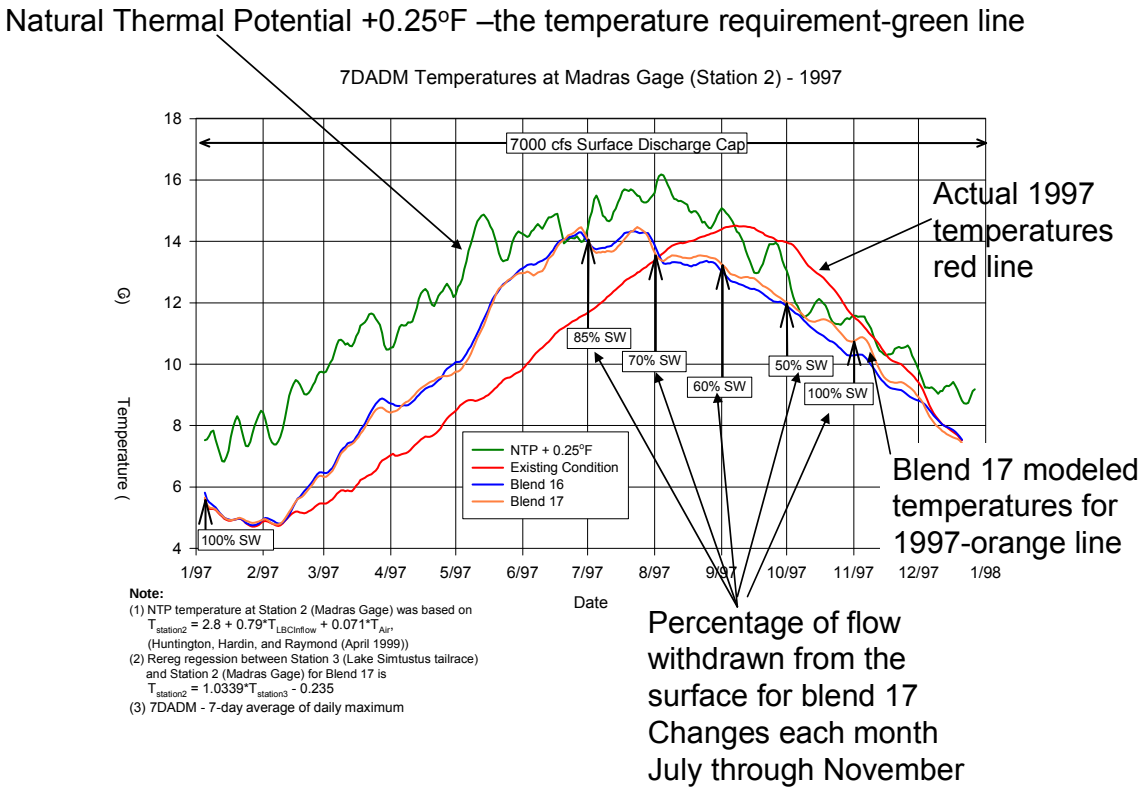
Managing Lower Deschutes River Temperatures



The above graph illustrates the unnatural water temperatures on the lower Deschutes River from 1964 to 2009. The green line shows the "Natural Thermal Potential" in 1997, the temperature the lower river would have been if the dams were not present. This, plus ¼ degree, is the temperature standard dam operators must now meet. The red line shows the actual temperature during 1997 at River Mile 100, just below the Reregulating Dam. The blue and orange lines are two computer-modeled blends of surface and deep water that met the goal of keeping discharge temperatures at or below natural thermal potential using the 1997 water year.

The temperature problem has occurred because the vast size of Lake Billy Chinook, the reservoir above Round Butte Dam, stores the water's heat or cold. Every spring since 1964, the hydro project has discharged cool winter water; warmer summer water was discharged each fall. The cool spring discharge delayed the river temperature cycle about two months. In the fall, where the red line is higher than the green line, the temperature exceeded the state and tribal water temperature standard. The water temperature management plan is designed to shift the temperature cycle for the lower Deschutes River back to what it would be if the dams were not in place. This means that temperatures discharged at River Mile 100 will be warmer in May, June, and July than in recent years and cooler in August, September and October.