# Ground Water Pumping And Streamflow Depletion In Montana[AFS]

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Stream dewatering poses a major threat to aquatic ecosystems in Montana. To prevent further dewatering in overappropriated basins, the Montana legislature and the Department of Natural Resources and Conservation have closed the upper Clark Fork, Musselshell, upper Missouri, Milk, and Teton Rivers and their tributaries to new water rights. Closures, however, do not apply to new ground-water appropriations. In response to the closures and prompted by the recent drought, agricultural water users have turned increasingly to ground-water wells and sprinkler systems as more reliable and efficient irrigation methods than traditional flood irrigation from surface-water diversions. The increased crop production made possible by these changes increases water consumption from the basins. New residential and commercial water users likewise may withdraw additional ground water from aquifers in the basin Because ground water naturally discharges into stream channels, this increased consumption of ground water ultimately decreases streamflow. Conjunctive stream-aquifer models can help planners maximize ground-water withdrawals while minimizing streamflow depletion at critical times of the year. Water-right transfers provide an alternative means to develop new water projects without increasing overall water consumption. Concurrent enforcement of the basin closures for all water, whether from surface or subsurface sources, would prevent further stream dewatering and protect existing water rights.