

Regional Water Quality Control Board
North Coast Region

Executive Officer's Summary Report
Thursday, June 29, 2017
Regional Water Board Office
Santa Rosa, California

ITEM: 3

SUBJECT: Flow Enhancement Opportunities Identified through the Scott Valley Groundwater Study (*Bryan McFadin, Dr. Thomas Harter and Gus Tolley, UC Davis*)

BOARD ACTION: This is an informational item. No action will be taken by the Regional Water Board.

BACKGROUND: The *Action Plan for the Scott River Watershed Sediment and Temperature Total Maximum Daily Loads* (Action Plan) identified groundwater contributions as an important factor that determines the temperature of the Scott River. The Action Plan requested that Siskiyou County develop a groundwater study plan, which was completed with the assistance of the University of California at Davis (UC Davis) team led by Dr. Thomas Harter in 2008. Since 2008, Dr. Harter and his team have developed the Scott Valley Integrated Hydrologic Model (SVIHM) in cooperation with Siskiyou County, the North Coast Regional Water Quality Control Board, University of California Cooperative Extension (UCCE), Scott Valley communities and landowners, the Scott River Watershed Council (SRWC), the Scott Valley Groundwater Advisory Committee (GWAC), and the Siskiyou Resource Conservation District (SRCD). The SVIHM is a transient integrated hydrologic groundwater and surface water model that represents current knowledge about the hydro-agro-eco-geography of the Scott Valley.

With the voluntary assistance of Scott Valley communities and landowners, the SRWC, GWAC, and SRCD, UC Davis has implemented field research and monitoring to assess and document water use and water table fluctuations, and refine the SVIHM as a modeling tool. The SVIHM modeling tool supports the development and evaluation of groundwater management scenarios, groundwater management pilot projects and assessment thereof, streamflow augmentation strategies, and analysis of links between groundwater dynamics and stream temperature dynamics.

DISCUSSION: Dr. Harter and his student, Gus Tolley, will present a number of strategies they have developed for managing the surface water and groundwater resources of Scott Valley to increase summer base flows in the Scott River. Their work builds on the community efforts described above.

One strategy for increasing Scott River flows is managing groundwater recharge. This approach involves flooding dormant agricultural fields during the winter when streamflow is high and water is available without impacting aquatic resources. In January 2016, the Scott Valley received the first of its kind temporary groundwater storage permit issued by the State Water Resources Control Board to test this option. The goals of the groundwater recharge project, headed by UC Davis professor Helen Dahlke, are to quantify how much

water can be recharged on agricultural fields, determine potential negative effects on the crop, and identify best management practices in the hopes this method can be applied to other areas in California as well.

Another management option is use of both surface water and groundwater for irrigation, but at different times of the year. In this approach, more surface water is used while it is available during the spring snow-melt months to reduce groundwater pumping. The source of irrigation water then switches to groundwater in summer months when surface water flows are lower. Although this would require an investment in infrastructure and coordination among stakeholders, preliminary modeling results show promising streamflow increases when this management scenario is implemented.

RECOMMENDATION: NA

SUPPORTING DOCUMENTS: None