



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
7600 Sand Point Way NE
Seattle, WA 98115

December 18, 2013

Eric Oppenheimer
State Water Resources Control Board
P.O. Box 100
Sacramento, California 95812

Dear Mr. Oppenheimer

Thank you for the opportunity to comment on the State Water Resources Control Board (SWRCB) October 4, 2013, discussion draft Groundwater Workplan Concept Paper (Workplan). NOAA's National Marine Fisheries Service (NMFS) supports the state's efforts to manage California groundwater more effectively. The goal of maintaining groundwater quality and quantity at sustainable levels to support beneficial uses of water over the long-term is important, because there is a relationship in many California streams to the protection and recovery of federally-listed anadromous salmonids.

NMFS, a division of the Department of Commerce, is the federal agency responsible for the stewardship of the nation's living marine resources and their habitat. This responsibility includes administration of the Federal Endangered Species Act (ESA) as it applies to anadromous salmonids and other marine resources. The ESA also declares that Federal agencies, such as NMFS, shall cooperate with state and local agencies to resolve water resource issues in concert with conservation of endangered species (ESA 2(c)(2)). Our interest in groundwater management relates to its potential effects on California streams with listed anadromous salmonids through groundwater/surface water interactions.


NMFS comments regarding the Workplan pertain primarily to groundwater/surface water interactions because the two sources of water are integrally connected. In areas where groundwater use potentially affects stream flows, groundwater management should incorporate provisions for the protection of surface waters and flow-dependent habitat attributes for federally threatened or endangered fishes (including salmonids). The enclosure provides specific comments on the five key elements defined in the Workplan.

NMFS recognizes the tremendous challenges associated with addressing water resource problems in California. Your success in managing groundwater will be a key factor in the protection of surface stream flows in many watersheds and will support NMFS efforts to protect and conserve threatened and endangered fishes. The initiation of the Groundwater Workplan is an appropriate starting point for this effort and we are looking forward to working with you throughout the process.



If you have questions regarding these comments, please contact David Hines at (707) 575-6098 or David.Hines@noaa.gov.

Sincerely,


for William W. Stelle, Jr.
Regional Administrator

enc.

cc: Chuck Bonham, CDFW
Maria Rae, Assistant Regional Administrator, CVAO, NMFS Sacramento, CA

Enclosure

NMFS Comments on the SWRCB
October 4, 2013 Discussion Draft
Groundwater Workplan Concept Paper

The following comments on the Discussion Draft Groundwater Workplan Concept Paper (Workplan) are grouped by the five key elements defined in the concept paper. These elements represent sound management principles that NMFS supports as a framework for groundwater management.

Thresholds. The Workplan defines thresholds as water quality and water quantity standards, or quantifiable triggers that support the assessment of groundwater conditions. When these thresholds are approached or exceeded, they initiate management actions designed to address the cause(s) of the exceedance. In watersheds where groundwater use has the potential to influence surface flows and associated salmonid habitat, we suggest the thresholds include surface water parameters such as limits to changes in stream discharge. In order to establish these new thresholds, NMFS recommends the SWRCB develop a specific process to: 1) identify areas where groundwater conditions affect surface flows that support anadromous salmonids; and, 2) define threshold metrics and quantify threshold values based on the best available science.

Monitoring. Establishing thresholds has little practical utility without monitoring and assessment of appropriate variables to determine condition of the resource. The monitoring program should therefore include data collection and analysis of potential stream depletion sites to protect aquatic species and other public trust resources. This would include gaging of surface streams in anadromous salmonid watersheds that could be influenced by groundwater use.

Accounting of demands on groundwater resources is a critical element of effective management. As proposed in section 3.2.2 of the Workplan, NMFS supports expansion of the SWRCB's groundwater recordation program and the creation of a searchable database of well completion reports. Data pertaining to well location and patterns of use should be reported on a temporal and spatial scale that promotes a full accounting of water resources. Similar well registration programs have been successfully implemented in other western states (*e.g.*, Washington, Oregon, Arizona, Colorado).

For assessment of the recently re-adopted Policy for Maintaining Instream Flows (AB 2121), Stetson Engineering prepared subterranean stream delineation maps for the SWRCB. These types of maps aid in determining which wells have the potential to adversely affect stream flows and could also be used to help redefine the extent of groundwater basins to the watershed scale. We believe subterranean stream delineation maps can be a useful tool for monitoring and managing groundwater/surface water interactions associated with the operation of wells.

In addition to wells within subterranean streams, wells outside that designation should also be managed to protect surface flow in streams. During the dry season in coastal California, streamflow is often sustained by groundwater seepage. Well use, even in fractured bedrock, can lower the hydraulic gradient between ground and surface water, which in turn reduces or

eliminates seepage into streams. Changes of this kind often take substantial time to manifest, so water use in spring or early summer may reduce surface flows later in the summer. As a consequence, the survivorship of juvenile salmonids rearing in coastal California streams can drop precipitously in the late summer with the loss of surface water and degradation of water quality.

Department of Water Resources Bulletin 118 delineates 431 groundwater basins and 24 of these basins are subdivided to create an additional 108 sub-basins, for a total of 515 distinct groundwater systems in California. However, demands for groundwater exist in many other small valleys and mountainous areas outside of these basins where withdrawals can affect surface stream flow. For example, in Sonoma, Napa and Mendocino counties, as development pressure increased in recent years, rural residential and agricultural activities have increasingly extended into mountainous streams with bedrock controls or thin veneers of alluvium. These areas include the spawning and rearing habitat for anadromous salmonids. In order to effectively manage potential groundwater/surface water impacts on salmonids, well management should extend to all areas with the potential to influence surface flows in anadromous streams.

To address groundwater/surface water interactions in Nebraska, a highly effective modeling effort has been developed to map potential groundwater depletion zones. These data are used to establish “safe yields” of groundwater that are protective of streamflow levels (Barlow and Leake 2012, USGS Circular 1376). The Nebraska program also includes an allotment system that allows trading/selling of groundwater allocations. This type of program may represent a viable solution for groundwater management and streamflow preservation in California outside areas classified as subterranean stream flow. Development of groundwater management plans should include the aforementioned concepts and have standardized criteria in basins where groundwater withdrawal affects subterranean and surface streams.

Governance. The October 31, 2013, draft of the California Water Action Plan (Water Action Plan) identifies actions to be taken over the next five years to move California toward more sustainable water management. Among the proposed actions in the Water Action Plan is a recommendation that local agencies be provided the incentives, tools, authority, and guidance to develop and enforce local and regional groundwater management plans. The plan goes on to propose that the state should have carefully-defined authority to protect groundwater resources until an adequate local program is established. NMFS supports this strategy for managing groundwater. However, while local control over the resource has its merits, the potential for conflicts of interest exist if the agency with the authority to regulate groundwater is also the agency that uses groundwater to meet its water supply objectives. The SWRCB should therefore consider an agency selection process that creates institutional separation of regulatory responsibility and users of the water supply.

Within the existing governance and management activities listed in section 3.3 of the Workplan, water rights administration is the only one that directly addresses the regulation of surface water flows. However, the SWRCB’s current set of water rights administration tools (*i.e.*, laws, regulations and policies) does not adequately protect surface water from depletion via groundwater uses. If water rights administration is to be used as a tool to manage groundwater, additional specific authority may be needed for the SWRCB to accomplish this.

Funding. NMFS concurs with the Workplan that successful groundwater management requires secure funding. We have no comments at this time on the adequacy of existing funding activities.

Oversite and Enforcement. NMFS concurs with the Workplan's statement regarding the need for oversight of groundwater management. We have no comments as to the adequacy of existing enforcement and oversight activities at this time. NMFS supports the recommendation to form an interagency task force to integrate agency authorities.

Literature Cited

Barlow, P.M., and Leake, S.A., 2012, Streamflow depletion by wells—Understanding and managing the effects of groundwater pumping on streamflow: U.S. Geological Survey Circular 1376, 84 p. (Also available at <http://pubs.usgs.gov/circ/1376/>.)