




State of California  
Department of Fish and Game

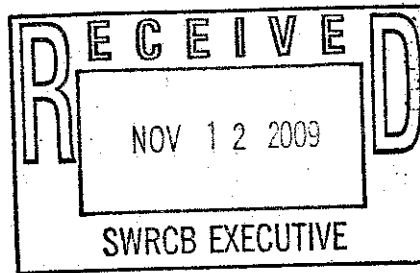
## Memorandum

Date: November 9, 2009

# LATE COMMENT

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From:   
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2009 NOV 12 AM 11:14

Subject: **Comments and Recommendations from the Department of Fish and Game to the State Water Resources Control Board for the November 18, 2009, Frost Protection Workshop and the Upper Russian River Stewardship Alliance Draft September 2009 Water Management and Conservation Plan**

The purpose of the subject State Water Resources Control Board (SWRCB) workshop is to consider recommendations for actions to address the effects of water diversions for frost protection of crops on salmonids in the Russian River watershed. Specifically, SWRCB requests information on: "1) the current status of Russian River salmonids and whether there have been any documented or suspected fish kills thought to be associated with diversions of water during frost events since the April 7 workshop, 2) cooperative voluntary actions taken by stakeholders since the April 7 workshop to prevent future impacts to salmonids from frost protection diversions, and 3) the need for short-or long-term regulatory action by the SWRCB."

The following includes part of the Department of Fish and Game's (DFG) comments and recommendations to SWRCB in preparation for the workshop. This input pertains only to the Upper Russian River watershed within DFG Northern Region, which includes Mendocino County and is responsive to information item 2, stated above. SWRCB may expect to receive additional comments and recommendations from the staff of DFG Bay-Delta Region, which includes Sonoma County, at the time of the workshop.

DFG interest in the subject document is based on our status as trustee agency for California's fish and wildlife resources. California Fish and Game Code (FGC) Section 711.7 states that fish and wildlife resources are held in trust for the people of the State by and through DFG. As trustee for the State's fish and wildlife resources,

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DFG has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants and habitat necessary for biologically sustainable populations of such species. Watershed habitat and species protection, including the provision of adequate instream flows for all life stages of fishery resources, are focal points of DFG's efforts to retain viable native populations of fish and wildlife.

State Water Code §1257 requires the SWRCB to consider the relative benefit to be derived from all beneficial uses of the water concerned including but not limited to, those listed for fish and wildlife resources. Beneficial uses of water in the Upper Russian River Hydrologic Unit relevant to fish and wildlife resources include Cold Freshwater Habitat; Migration of Aquatic Organisms; Commercial and Sport Fishery; Rare, Threatened, or Endangered; Spawning, Reproduction, and/or Early Development; and Wildlife Habitat. The Russian River is designated as a fully-appropriated stream by the SWRCB.

#### **Ecological Significance of Russian River Watershed**

The Russian River is a regionally-important fish-bearing stream that currently supports three listed salmon species. The Upper Russian River and its tributaries support Chinook salmon (*Oncorhynchus tshawytscha*) and steelhead trout (*O. mykiss*). Both species are listed as threatened pursuant to the federal Endangered Species Act (ESA). Coho salmon (*O. kisutch*) are present in the watershed downstream, and are listed as endangered pursuant to the ESA and California Endangered Species Act (CESA). Chinook salmon, coho salmon and steelhead trout spawn and rear in the Russian River and its tributaries during the annual frost-prone periods of late winter and early spring. Tributaries to the upper Russian River not only support aquatic species in the upper reaches, but also contribute flow crucial to supporting anadromous fish in the lower reaches of the watershed.

#### **Effects of Frost Protection Diversions and Subsequent Actions**

During the frost-prone periods, water is diverted from the Russian River and its tributaries and used to prevent damage to crops from frost events. In the spring of 2008, low rainfall and a high number of consecutive frost events occurred in the region. During the overnight frost events, multiple concurrent water diversions for crop frost protection caused sharp decreases in instream flows throughout the watershed. These sharp decreases lead to the discovery of two salmonid stranding incidents, as documented by National Marine Fisheries Service (NMFS). While DFG has not documented subsequent fish strandings incidents associated with water diversions for frost protection in the Upper Russian River reaches, multiple concurrent water diversions in response to frost events similar to those that led to fish stranding have recurred. DFG is concerned there remains a high potential for repeated take of fish from frost protection-related water diversions throughout the watershed.

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To avoid future impact to aquatic species from frost protection diversions, NMFS staff requested the SWRCB pursue additional regulatory action to limit diversion activities for frost protection in the Russian River watershed. As a result of the NMFS request, an initial public hearing regarding proposed regulatory action was held by SWRCB on April 7, 2009. DFG participated in the workshop by providing the biological overview of the threatened and endangered salmonid species impacted by cumulative channel surface water diversion activities. DFG also provided an outline of the regulatory response actions taken by DFG to prevent further impact to fishery resources, including the limitations of such actions as currently available. The decision to develop further regulatory actions by SWRCB staff is currently pending.

In response to the actions of NMFS and SWRCB, the Upper Russian River Stewardship Alliance (URSA) was formed. URSA is a partnership organization comprised of the Mendocino County Farm Bureau (MCFB), the Mendocino County Russian River Flood Control and Water Conservation Improvement District (RRFC), and the California Land Stewardship Institute (CLSI), and various other interest groups and organizations. The members of URSA collaborated to develop the "Water Management and Conservation for Frost Control in the Upper Russian River, Mendocino County" (Plan). URSA developed the Plan, which includes voluntary actions, as an alternative to proposed SWRCB regulatory action.

#### **Recommended SWRCB Action for the Upper Russian River Watershed**

Since the April 7 workshop, URSA has developed its Plan aimed at reducing instream impacts from frost protection diversions. Despite significant progress in actions and planning, DFG finds the URSA Plan requires modification to provide adequate protection of fishery resources. In the absence of the following recommended changes and clarifications of the URSA Plan, DFG believes the potential for take of listed salmonids during future frost events will remain high. DFG recommends SWRCB take an active role to help ensure the URSA Plan is changed for it to be effective. However, DFG also recommends SWRCB and other workshop participants carefully consider whether the URSA Plan alone (without supplementary regulatory actions) even if modified as recommended below, will be effective in conserving fish and other aquatic resources in the Upper Russian River watershed. As stated above, DFG will provide at the time of the workshop additional information and recommendations responsive to the question whether short- or long-term regulatory actions are required.

#### **Upper Russian River Stewardship Alliance Plan**

The URSA Plan may, through further development contain both short- and long-term strategies to provide water for frost protection purposes, while ensuring the prevention of take of listed fish species. Many steps taken or proposed in the URSA Plan and by its member organizations have real merit in this regard, particularly for the Russian River mainstem. DFG acknowledges the significant efforts and progress of URSA to present solutions, which may provide both protection for fish and water

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available for frost protection uses. Such efforts include: 1) frost protection water-demand monitoring, 2) improved accuracy of timed releases from Coyote Dam, 3) an additional U.S. Geological Survey flow gauge at Talmage, 4) enhanced regional and sub-regional forecasting, and 5) the addition of telemetric meters for RRFC contract holders. DFG is encouraged by proposed off-stream water storage development in agricultural areas, project funding from the Nation Resource Conservation District (NRCS), Best Management Practices (BMP) development and implementation, and the potential future employment of recycled water for frost protection as outlined in the URSA Plan.

Increasing off-stream water storage for frost protection will provide greater flexibility to avoid cumulative instantaneous demand, but only to the degree the watershed receives enough rainfall to charge and re-charge the increased storage volumes. The large number of consecutive frost events in 2008 resulted in high demand for water over a several week period. If similar weather circumstances create numerous high instantaneous water demand events, then timed water releases from Coyote Dam and additional storage volumes throughout the watershed, may not be adequate to avoid impacts to fishery resources resulting from cumulative instantaneous rates of diversion.

#### **Comments and Recommendations for the URSA Plan**

DFG recommends the following elements be developed and incorporated into the URSA Plan, in addition to the comments and recommendations as provided by NMFS.

1. The URSA Plan was developed as a voluntary strategy to address NMFS concerns over take of fish species listed pursuant to ESA by frost protection diversions. DFG recommends the Plan also include a description of other statutes and regulations applicable to frost protection diversions and establish goals and the means for regulatory compliance with these authorities. The Plan should describe how water users will meet FGC Section 1600 *et seq.* "Lake or Streambed Alteration Agreement" and FGC Section 5937 "Maintain Fish in Good Condition", and all applicable sections of California Water Code while implementing the Plan.

2. The Plan should include an account of the status and life histories of listed species in the upper Russian River and its tributaries affected by frost protection water diversions, including current population trends, habitat associations, critical developmental stages and minimum flow requirements in relation to seasonal, periodic, and cumulative water demand for frost protection.

3. The conservation measures descriptions in the URSA Plan be related to specific goals to protect aquatic resources, as well as methods to achieve each goal. Best Management Practices to prevent impacts to aquatic resources must be included as an attachment to the Plan.

4. The URSA Plan relies on voluntary membership participation, and does not contain an enforcement element. As such, the effectiveness of such a plan, particularly during challenging periods of low rainfall and flow conditions, remains in question. DFG recommends the Plan include an enforcement strategy, which can be developed by working with the members of the Russian River Frost Task Force with NMFS as lead.
5. The URSA Plan should include incentives for membership participation. URSA should work with the SWRCB, NMFS, and DFG to determine what incentives, including prioritized appropriate permit term requests, could reasonably be implemented.
6. The URSA Plan, in its introduction, should describe the instream conditions and the cumulative instantaneous rate of water withdrawal for frost protection that led to the fish-stranding events of 2008 and the formation of the Russian River Frost Protection Task Force, and the development of the URSA Plan.
7. As written, the Plan assumes the extent of incidental take of a federally-listed species was limited to only "a few" individuals and to the one incident to which it refers in the Upper Russian River. Considering the limitations of detection methods for certain life stages of fish species, DFG does not share the assumption the incidences of take are limited only to these documented occurrences.
8. The Problem Statement identifies three factors leading to the acknowledged fish stranding incident in 2008. These are: 1) the low rainfall in and weather conditions of 2008, 2) insufficient water releases from Coyote Dam, and 3) the cumulative instantaneous rate of water diversion for frost protection. The Problem Statement should be modified to include information regarding the presence and listing status of Chinook salmon and steelhead trout in the upper Russian River watershed, and coho salmon presence downstream. The Problem Statement should also include an outline of the potential impacts of practicing multiple direct diversions for frost protection simultaneously in the presence of such species. The legal rights that support such water diversions should be included in a separate section.
9. The Problem Statement includes a discussion of "Economic Concerns" and the regional economic value of wine grapes and crop losses from frost. To be complete, and balanced, this section must also include a discussion of the economic value of fish as a Public Trust resource supporting commercial and sport fisheries. For example, the Governor's 2009 "State of Emergency Proclamation - Chinook Salmon" estimated that California's economy lost \$279 million from the closure of Chinook salmon ocean and freshwater fishing in the Central Valley, with an estimated loss of 2,690 jobs.

10. The URSA Plan should include a complete account of URSA participants and their roles. The Plan should describe the roles of the NRCS, Mendocino Wine and Grape Commission, UC Cooperative Extension, Redwood Valley Water District, Mendocino County Water District, and the County of Mendocino.
11. The Plan should clarify the shared roles between the CLSI monitoring program and the Science Advisory Group listed in the Organizational Structure as well as with the monitoring and BMP sub-committees developed out of the efforts of the Russian River Frost Task Force.
12. The Plan should include provisions to gather additional gauging data and continual monitoring and reporting to ensure timed compensatory releases from Coyote Dam are managed to avoid impacts to fisheries resources and to channel morphology. The Plan should include specific information regarding maximum ramping rates and identify any limitations such rates may have in meeting expected maximum instantaneous demands.
13. While pulsed releases from Coyote Dam may effectively accommodate the needs for Russian River diversions to protect crops from frost events while maintaining fish in good condition, the supply of water available for this purpose beyond what is allocated to the Russian River Flood Control and Water Conservation District (RRFC) remains uncertain. The Plan is unclear as to whether sufficient water is available to refill storage ponds following use of stored water for frost protection. To help resolve this question, The URSA Plan should include the RRFC water budget for timed releases and the maximum number of frost events the budget would support. This information could, alternatively, be included as part of the Draft Upper Russian River Pumping Coordination Protocol.
14. The Plan should clarify whether the additional release of water is intended for all Russian River mainstem diversions for frost control, or specifically for those entities who have contracts with RRFC.
15. The URSA Plan does not include short-term goals and actions to address impacts to fish in the upper Russian River tributaries. The Plan should include short-term efforts necessary to identify minimum instream flow thresholds to maintain fish in good condition both in tributaries and in the mainstem Russian River where frost protection water diversions occur. The URSA Plan should include an independent analysis to identify threshold conditions at which fish are impacted and the frequency such threshold conditions may occur. Such conditions will likely differ by sub-basin. Employing the July 2008 report prepared for the Mendocino County Water Agency, "Irrigated Agriculture Water Needs and Management in the Mendocino County Portion of the Russian River Watershed", with the addition of the 2008 "water for frost use" data and the RRFC "frost water budget" for the Russian River could provide a solid basis this analysis.

16. The URSA Plan's proposal for effectiveness monitoring focuses mainly on geological processes as affected by infrastructure and other development in the Russian River watershed. While the effectiveness monitoring as proposed would assist in the overall understanding of watershed processes, it does not examine the direct relationship between frost diversion activities and potential impacts to fisheries from reduced instream flows.

The URSA Plan's effectiveness monitoring should focus on actions that ensure frost protection diversions do not contribute to conditions resulting in take of listed species and/or other impacts to aquatic resources. The effectiveness monitoring component should help confirm actions are effective in avoiding impacts from frost protection activities, such as flow impairment or de-watering of channels and the stranding of fish. Such monitoring should confirm suitable bypass flows are maintained, and diversions are being managed to ensure they are. The monitoring should rely on real-time stream gauging data, to monitor compliance and guide management of diversions (e.g., timing, location and quantity). It should also monitor the effects of bypass flows and diversion rates on aquatic resources. The monitoring component should include a requirement for reporting. Gauging and minimum bypass flows should be maintained on all streams where frost protection diversion occurs and aquatic species may be affected.

17. In the event flow conditions reach threshold criteria which do not support diversion activities and prevent take of fish, the URSA Plan should: a) include an emergency coordinated member response protocol for timely curtailment of direct diversion activities to avoid impacts to fishery resources, b) establish threshold minimum-flow conditions protective of aquatic species for all tributaries and mainstem Russian River reaches, and c) include a description of membership responsibilities to help coordinate and work with regulatory agency staff to enforce such a plan.

18. As proposed by the URSA Plan, the Science Advisory Group is made up of private consultants and university staff members. The role of this group is to review and provide recommendations for monitoring studies and offstream storage development projects, as administered and operated by CLSI. The Science Advisory Group should be independent of the membership organizations of URSA, including CLSI, to avoid potential conflicts of interest and to help ensure process transparency. Agency representatives should be included in the Science Advisory Group and have a role in deciding the use of and access to data.

19. The Plan should provide a clear time frame for its further development and implementation.

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### **Summary**

Diversions for the purpose of frost protection have resulted in several low-flow events in the Russian River watershed. In some instances, the low-flows have caused documented take of listed fish.

Currently, the URSA Plan requires substantial modification to ensure fish and other aquatic resources are not impacted by frost protection-rated diversions. DFG recommendations for the modification to the URSA Plan include descriptions of BMPs to be implemented, bypass flows designed to prevent take of fish, measures to comply with all applicable regulations, and adequate monitoring. The Plan must be protective of instream beneficial uses and aquatic resources and describe effective monitoring of diversions.

DFG looks forward to working with the members of the URSA Program, SWRCB, NMFS, and the members of the Russian River Frost Task Force to continue the development of measures focused on protection of listed fishery resources. DFG is dedicated to the continued support of these efforts through consultation, plan review, provision of recommendations, meeting participation, and permit review and processing.

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