Emergency Actions due to Insufficient Flow for Specific Fisheries in Tributaries to the Russian River

June 16, 2015

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In Title 23, Division 3, Chapter 2, amend the title of Article 24, and add section 876 to read:

Article 24. Curtailment of Diversions and Other Actions Based on Insufficient Flow to Meet All Needs

§ 875 [reserved]

§ 876 Emergency Enhanced Water Conservation and Additional Water User Information for the Protection of Specific Fisheries in Tributaries to the Russian River

The State Water Resources Control Board (State Board) has determined that it is a waste and unreasonable use of water under Article X, section 2 of the California Constitution to divert or use water sourced from within the watersheds listed in subdivision (c) in a manner inconsistent with subdivision (d) during the current drought emergency, regardless of water right seniority, given limited available supply and the need for the water to support other more critical uses.

(a) For the purposes of this section:
  (1) "Gray water" means all untreated rainwater collected in a runoff capture system or any water meeting the definition in Health and Safety Code section 17922.12.
  (2) "Ornamental turf" means all turf other than turf used for community recreation by education facilities, recreation-related business, non-profit organizations, or recreational facilities, including but not limited to sports fields and playgrounds, that are generally accessible to the public.
  (3) "Landscapes" includes all plantings besides ornamental turf, including but not limited to trees, annual plants, perennial plants, and edible plants, but does not include agricultural commodities meeting the definition of Government Code section 51201, subdivision (a).

(b) For the protection of threatened and endangered fish, all water users who receive water from diversions sourced within the watersheds designated in subdivision (c) shall comply with subdivision (d). To better assess impacts on surface stream stage and flow, all landowners in, or suppliers of water from, the watersheds designated in subdivision (c) shall comply with subdivision (e).

(c)(1) The State Board has authority to ensure the protection and preservation of streams and to limit diversions to protect critical flows for species, including for state- and federally-threatened and endangered salmon and steelhead species. The following watersheds have been identified as critical rearing habitat for juvenile state- and federally-listed Central California Coast coho salmon (CCC coho salmon) and Central California Coast steelhead (CCC steelhead). All landowners and water users within the following watersheds and the use of said

water shall be subject to this section.

(A) The portion of the Mark West Creek watershed as defined by the United States Geological Survey- Watershed Boundary Dataset- Hydrologic Unit Code 180101100706. Mark West Creek enters the Russian River from the south at river mile 31, along the northern border of Forestville. This portion of the Mark West Creek watershed spans approximately 57 square miles.

(B) Mill Creek. Mill Creek is a tributary to Dry Creek, which enters the Russian River from the west at river mile 42, approximately one mile south of Healdsburg. The Mill Creek watershed spans approximately 23 square miles.

(C) Green Valley Creek. Green Valley Creek enters the Russian River from the south at river mile 29, along the northwestern border of Forestville. The Green Valley Creek watershed spans approximately 38 square miles.

(D) Dutch Bill Creek. Dutch Bill Creek enters the Russian River from the south at river mile 13, within the town of Monte Rio. The Dutch Bill Creek watershed spans approximately 12 square miles.

(2) The State Board recognizes that the upper portion of each of the watersheds listed in (c)(1) is the most critical for mid- to late-summer rearing of state and federally threatened and endangered salmon and steelhead species. These upper portions are defined as:

(A) On Mark West Creek, the portion of the watershed upstream of the confluence with an unnamed tributary (the tributary flowing parallel to western Riebli Road) as defined by the Latitude/Longitude of 38.5066°N and 122.72607°W.

(B) On Mill Creek, the portion of the watershed upstream of the confluence with Felta Creek, and including Felta Creek, as defined by the Latitude/Longitude of 38.58098°N and 122.88306°W.

(C) On Green Valley Creek, the portion of the watershed upstream of the confluence with Atascadero Creek as defined by the Latitude/Longitude of 38.44841°N and 122.88697°W.

(D) On Dutch Bill Creek, the portion of the watershed upstream of the confluence with Tyrone Gulch as defined by the Latitude/Longitude of 38.44776°N and 122.99979°W.

(d)(1) The use of potable and non-potable water sourced from areas identified in accordance with subdivision (d)(3) is prohibited for any of the following actions, except where necessary to address an immediate health and safety need or where used exclusively for irrigation for commercial agricultural use meeting the definition of Government Code section 51201, subdivision (b):

(A) The application of water, except gray water, to ornamental turf;

(B) The application of water to landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures;

(C) The application of water, except gray water, to landscapes more than two days per

week;

(D) The application of water, except gray water, to landscapes between the hours of 8:00a.m. to 8:00p.m.;

(E) Washing motor vehicles, except with gray water or at car wash facilities where the water is part of a recirculating system;

(F) The application of water to driveways and sidewalks;

(G) The use of water, except gray water, to fill or refill decorative ponds, fountains and other decorative water features;

(H) The use of water, except gray water, in a fountain or other decorative water feature, except where the water is part of a recirculating system; and

(I) The application of water to landscapes during and within 48 hours after measurable rainfall.

(2) To prevent the waste and unreasonable use of water and to promote water conservation, operators of hotels and motels shall provide guests with the option of choosing not to have towels and linens laundered daily, if daily laundering is offered. The hotel or motel shall prominently display and/or communicate notice of this option to each guest using clear and easily understood language.

(3) The conservation measures identified in subdivisions (d)(1) and (d)(2) shall take effect immediately for all water users who receive water from diversions, whether surface or subsurface, sourced from within the watersheds designated in subdivision (c)(2). The Deputy Director for the Division of Water Rights (Deputy Director), after consultation with the California Department of Fish and Wildlife (CDFW) or the National Marine Fisheries Service (NMFS), may extend those requirements to some or all of the remainder of each tributary watershed identified in subdivision (c) to support CCC steelhead and CCC coho salmon passage this migratory season. The Deputy Director may, after consultation with CDFW or NMFS, lift the conservation measures identified in subdivisions (d)(1) and (d)(2) for all or any portion of the watersheds listed in subdivision (c), based on availability of sufficient streamflow in the tributaries to protect CCC coho salmon and CCC steelhead.

(4) Subdivision (d) shall not place additional restrictions on a party who participates in a voluntary drought initiative program (program) determined by CDFW or NMFS to be at least equivalent to the conservation measures in subdivisions (d)(1) and (d)(2), so long as the party fully complies with the terms and conditions of the program. CDFW or NMFS must provide the Division of Water Rights with a copy of the program and a list of all parties included in the program to confirm participation. Participation in such a program shall not affect any other obligations to implement conservation practices, comply with informational orders, curtail diversions, or comply with other requirements or prohibitions not based on subdivision (d).

(5) The conservation measures required by subdivision (d) do not supersede or affect other conservation requirements for water suppliers, or individual end users.

(6) The taking of any action prohibited in subdivisions (d)(1) or failure to take the action required by subdivision (d)(2) is an infraction, punishable by a fine of up to five hundred

dollars ($500) for each day in which the violation occurs. The fine for the infraction is in addition to, and does not supersede or limit, any other remedies, civil or criminal, including civil liability pursuant to Water Code section 1846.

(e) Due to the known hydraulic connection between sub-surface water and surface streams in the Russian River watershed, as well as the limited water use information in the area, additional information on diversions, whether surface or subsurface, and use of water is needed to better assess impacts on surface stream flows. The Deputy Director may issue informational orders to some or all landowners in, or suppliers of water from, the watersheds identified in subdivision (c)(1), requiring them to provide additional information related to diversion and use of water, including but not limited to the: date of first use, location of diversion, type of diversion, types of beneficial uses, distance of well from the nearest surface stream, depth of the well, well screen interval(s), place of use, estimated 2014 diversion amount, estimated 2014 use amount, source of water, volume of storage, estimated pumping/diversion rate, amount of water anticipated to be needed this year, or any other information relevant to forecasting use and impacts to the surface streams in the current drought year or in contingency planning for continuation of the existing drought emergency. Any party receiving an order under this subdivision shall provide the requested information within 30 days. The Deputy Director may grant additional time for the submission of information regarding diversion and use of water upon substantial compliance with the 30-day deadline and a showing of good cause.

(1) Each landowner is responsible for immediately providing notice of any informational order(s) to all water users associated with the parcel of land related to the informational order.

(2) The failure to provide the information requested within 30 days or any additional time extension granted, is a violation subject to civil liability of up to $500 per day for each day the violation continues pursuant to Water Code section 1846.

(f) New Diversions. For purposes of this subdivision, a new diversion means a surface or subsurface diversion initiated after issuance of a watershed-wide informational order to landowners in the watershed in which the new diversion is located. The owner of any new diversion must submit to the Deputy Director any information required by a watershed-wide informational order issued under subdivision (e) prior to commencement of the new diversion, unless the Deputy Director approves commencement of the diversion based on substantial compliance.

(g) The State Board has established an email distribution list that landowners or others may join to receive notices and updates regarding informational orders and conservation measures required per this section. Notice provided by email or by posting on the State Board's webpage shall be sufficient for all purposes related to notices and updates regarding the provisions of this section.

Authority: Sections 1058, 1058.5, Water Code

Reference: Article X, Section 2, California Constitution; Sections 100, 102, 104, 105, 109, 174, 275, 1011, 1051, 1052, 1058.5, Water Code; *Light v. State Water Resources Control Board* (2014) 226 Cal.App.4th 1463

FINDING OF EMERGENCY

The State Water Resources Control Board (State Water Board or Board) finds that an emergency exists due to severe drought conditions. Immediate action is needed to promote water conservation and to prevent the waste and unreasonable use of water diverted from priority water bodies that provide habitat for threatened and endangered species in light of limited water availability during the drought. Immediate action is needed to support fish and wildlife and to maintain beneficial uses of water in Dutch Bill Creek, Green Valley Creek, portions of Mark West Creek, and Mill Creek watersheds. The California Department of Fish and Wildlife (CDFW) and the National Marine Fisheries Service (NMFS) have identified these four creeks as high priority tributaries for the adoption of an emergency regulation to prevent the extirpation of Central California Coastal (CCC) coho salmon from the Russian River watershed. These four tributaries have also been identified as Coho Partnership Priority watersheds[1] (Obedzinski and Nossaman, 2012). All four tributaries support CCC coho salmon and CCC steelhead populations, and do not contain major flow-regulating reservoirs. CCC coho salmon and CCC steelhead present in Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek are at risk of extirpation due to low flow conditions affecting multiple year-classes in this extended drought.

On January 17, 2014, Governor Edmund G. Brown Jr. declared a drought state of emergency (January 2014 Proclamation). On April 25, 2014, the Governor issued a Proclamation of a Continued State of Emergency (April 2014 Proclamation) to strengthen the state's ability to manage water and habitat effectively in drought conditions. The April 2014 Proclamation orders that the provisions of the January 2014 Proclamation remain in full force and also adds several new provisions. The April 2014 Proclamation also suspends the California Environmental Quality Act (CEQA) to allow drought emergency regulations and other actions to take place as quickly as possible. On December 22, 2014, Governor Brown issued Executive Order B-28-14, which extended the CEQA suspension for certain activities, including adoption of emergency regulations, through May 31, 2016.

On May 27, 2014, the State Water Board sent notices of curtailment, dated May 27, 2014, to water right holders in the Russian River Watershed upstream of the Russian River's confluence with Dry Creek. Curtailments were issued to protect senior water rights. With that notice, the State Water Board notified holders of post-1914 appropriative water rights within the Russian River watershed upstream of the confluence of Dry Creek with a priority date of February 19, 1954 or later (Application A015743 or higher), of the need to immediately stop diverting under their junior post-1914 water rights. Curtailments in the Russian River Watershed were lifted on November 14, 2015.

[1]Coho Partnership Priority watersheds are streams where streamflow is known to limit coho survival and where a cooperative project(s) could provide opportunities for both salmon and water users.

On January 23, 2015, the State Water Board issued a Notice of Surface Water Shortage and Potential for Curtailment of Water Right Diversions for 2015. The notice advises that if dry weather conditions persist, the State Water Board will notify water right holders in critically dry watersheds of the requirement to limit or stop diversions of water under their water right, based on their water right seniority. Due to the dry hydrologic conditions, the State Water Board issued Water Diversion Curtailment Notices in 2014 and 2015 to water right holders within some critically dry watersheds[23]. The State Water Board is proposing mandatory conservation efforts in priority Russian River tributaries rather than curtailments; however, curtailments may be necessary in priority Russian River tributaries if conservation efforts do not succeed.

On April 1, 2015, Governor Brown signed Executive Order B-29-15 (April 2015 Order), replacing the earlier calls for voluntary conservation with directives, among other things, for the State Water Board to impose restrictions to achieve a statewide 25 percent reduction in potable urban water usage through February 2016, with a focus on irrigation of outdoor ornamental landscapes. The April 2015 Order also directs the State Water Board to increase enforcement of waste and unreasonable use violations and to collect increased information from water users. The April 2015 Order mandates that the Governor's January 17, 2014 Proclamation, April 25, 2014 Proclamation, Executive Order B-26-14, and Executive Order B-28-14 remain in full force and effect except as modified.

Emergency Defined

Water Code section 1058.5 grants the State Water Board the authority to adopt emergency regulations in certain drought years in order to: "prevent the waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion, of water, to promote water recycling or water conservation, to require curtailment of diversions when water is not available under the diverter's priority of right, or in furtherance of any of the foregoing, to require reporting of diversion or use or the preparation of monitoring reports."

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[2] Curtailment Orders for 2015 have been issued in the Antelope Creek watershed on April 4, 2015 and the Deer Creek watershed on April 18, 2015 to ensure drought emergency minimum flows specified in California Code of Regulations, title 23, section 877, subdivision (c) are met. The curtailments for Antelope Creek and Deer Creek were lifted on May 29, 2015 and June 3, 2015, respectively. However, the Sacramento River watershed curtailment remains in effect. More information can be found at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/milldeerantelope_curtailment_info.shtml

[3] Water Diversion Curtailment Notices for 2015 have been issued in the following watersheds: San Joaquin River watershed for post-1914 water rights issued on April 23, 2015; Scott River watershed for junior class water rights issued on April 23, 2015; Sacramento-San Joaquin Delta watershed water rights with Term 91 as a condition issued on April 30, 2015; Sacramento River watershed and Delta for post-1914 water rights issued on May 1, 2015; Sacramento-San Joaquin Delta watershed water rights with a priority date of 1903 or later on June 12, 2015. More information can be found at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/water_availability.shtml

Emergency regulations adopted under Water Code section 1058.5 remain in effect for up to 270 days. The finding of emergency is not subject to review by the Office of Administrative Law. In this document, the State Water Board is providing the necessary specific facts demonstrating compliance with Water Code section 1058.5, subdivision (a), and also Government Code section 11346.1. Government Code section 11346.1, subdivision (a)(2) requires that, at least five working days prior to submission of the proposed emergency action to the Office of Administrative Law, the adopting agency provide a notice of the proposed emergency action to every person who has filed a request for notice of regulatory action with the agency. After submission of the proposed emergency to the Office of Administrative Law, the Office of Administrative Law shall allow interested persons five calendar days to submit comments on the proposed emergency regulations as set forth in Government Code section 11349.6.

The information contained within this finding of emergency provides information to support the State Water Board's emergency rulemaking under Water Code section 1058.5 and also meets the emergency regulation criteria of Government Code section 11346.1 and the applicable requirements of section 11346.5.

Evidence of Emergency

The U.S. Drought Monitor currently classifies almost the entire state of California as experiencing severe to exceptional drought conditions (United States Drought Monitor, 2015). The entire Russian River watershed is currently classified as experiencing severe drought conditions (United States Drought Monitor, 2015).

The Russian River watershed receives most of its precipitation from December through March, usually from a handful of winter storms. Unlike the watersheds of the Central Valley, which are adjacent to the Sierras, there is little to no snowpack available to sustain the Russian River during spring and summer. This results in a rapid decline in base flow as the year progresses. Thus far in water year 2015 (October 1, 2014-May 31, 2015), total rainfall in the region reached 83% of the historical average, principally due to storms in December 2014. However, dry conditions persisted into subsequent months and flow in the Russian River and its tributaries have decreased below average values. As of June 1, 2015, mean flow at the United States Geological Survey (USGS) gauge in the Russian River near Healdsburg was 93.5 cubic feet per second (cfs), which is only 30% of water year 2000-2014 average for June 1 (USGS, 2015).

California is in a fourth year of this drought. Water year 2012 was categorized as below normal, calendar year 2013 was the driest year in recorded history for many parts of California, water year 2014 was the third driest in the 119 years of record, and water year 2015 began on a similar dry trend with the driest January on record for portions of the state. Storage in the largest reservoirs across the state is far below average (DWR, 2015a).

In May 2013, Governor Brown issued Executive Order B-21-13, which directed the State Water Board and the Department of Water Resources (DWR) to, among other things, take immediate action to address dry conditions and water delivery limitations. In December 2013, the Governor also formed a Drought Task Force to review expected water allocations and the state's preparedness for a drought.

Governor Brown's January 2014 Proclamation recognizes, among other things, that change to water supplies and diversions might be necessary to protect salmon and steelhead, to maintain water supplies, and protect water quality. The January 2014 Proclamation ordered the State Water Board to "… put water right holders throughout the state on notice that they may be directed to cease or reduce water diversions based on water shortages," which the State Water Board did on January 17, 2014 and again on January 23, 2015. The State Water Board's January 17, 2014 notice advised that if dry weather conditions persist, the State Water Board will notify water right holders in critically dry watersheds of the requirement to limit or stop diversions of water under their water right, based on their priority. The State Water Board's January 23, 2015 notice encourages advanced conservation planning and suggests that water right holders look into the use of alternative water supplies, such as groundwater wells, purchased water under contractual arrangements and recycled wastewater.

On March 1, 2014, Governor Brown signed legislation to assist drought-affected communities and provide funding to better manage local water supplies. The drought relief package, among other things, provided funding to improve water conservation, emergency supplies, reduce fire risk, and increase fire-fighting capabilities. The drought relief package also expanded the State Water Board's existing emergency regulation authority under Water Code section 1058.5 and made statutory changes to ensure existing water rights laws are followed, including streamlining authority to enforce water rights laws and increasing penalties for illegally diverting water during drought conditions (Senate Bill 104; Statutes 2014; Chapter 3; Committee on Budget and Fiscal Review). On April 25, 2014, Governor Brown issued a Proclamation of a Continued State of Emergency related to the drought. The April 2014 Proclamation ordered that the provisions of the January 2014 Proclamation remain in full force and also added several new provisions. Of note here, the April 2014 Proclamation directs the State Water Board to adopt and implement emergency regulations as appropriate to promote water recycling and curtail diversions when water is not available, and suspends environmental review under CEQA for the adoption of emergency regulations pursuant to Water Code section 1058.5.

Due to the continuing dry conditions, on April 3 and April 17, 2015, the State Water Board issued Orders of Curtailment of Surface Water Diversions in the Antelope Creek and Deer Creek Watersheds, respectively. On April 23, 2015, Notices of Curtailment of Water Right Diversions were issued in the Scott River Watershed. Again, on April 23, 2015, Notices of Curtailment of Surface Water Diversions were issued to water right holders in the San Joaquin River Watershed for all post-1914 appropriative water rights. On April 30, 2015, Notices of Curtailment of Surface Water Diversions were issued to the holders of 88 water rights in the Sacramento-San Joaquin Delta watershed with Term 91 as a condition of their permits or licenses. On May 1, Notices of Curtailment of Surface Water Diversions were issued to water right holders in the Sacramento River Watershed for all post-1914 appropriative water rights. On June 12, 2015 Notice of Curtailment of Water Right Diversions were issued in the Sacramento-San Joaquin and Delta Watersheds for all pre-1914 appropriative claims with a priority date of 1903 or later.

As recognized in Water Code section 106.3, access to water for human consumption, cooking and sanitation is a basic human right. Cities, counties and water districts across the state have enacted drought emergency measures to conserve supplies. As of June 5, 2015, the State Water Board's Division of Drinking Water has not identified any public water systems that are currently at severe risk of running out of water. However, it is anticipated that much of the state will again be severely impacted in the months to come by the continuing drought. The State Water Board will continue to evaluate the condition of public water systems in the state and take action to provide assistance to systems whose water supplies it determines reach critically low levels. The State Water Board Division of Drinking Water's regulatory oversight does not include residences supplied by a privately owned well or water systems with less than 15 customers.

Fire risk is also greatly increased throughout the state due to the drought. Preliminary data from the California Department of Forestry and Fire Protection (CAL FIRE) show that over 5,000 fires burned in California in 2014, which is roughly 20 percent more fires than the five year average (CAL FIRE, 2015b). In 2014, CAL FIRE and other Wildland Fire agencies responded to over 50 fires of at least 300 acres in size; these large fires burned a total of 535,724 acres (CAL FIRE, 2014a). If the dry trend continues, the 2015 fire season is anticipated to be extremely severe. Already, the 2015 fire season is off to a severe start. According to CAL FIRE, 6,857 acres have burned during the period of January 1, 2015 through May 30, 2015 (CAL FIRE, 2015a).

Need for the Regulation

Immediate action is needed to prevent the waste and unreasonable use of water diverted from priority water bodies that provide habitat for threatened and endangered species in light of limited water availability during the drought. The State Water Board intends to establish and implement emergency drought requirements for the protection of federal- and state-listed anadromous fish in four priority Russian River tributary watersheds (Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek). The regulation consists of two elements: (1) enhanced conservation measures for all users of surface and sub-surface water diverted within the four watersheds; and (2) enhanced information order authority that will allow the State Water

Board to acquire information in circumstances beyond those covered under the existing information order emergency regulation.

Water Rights Framework

In order to best understand the need for the regulation and how it will be applied, a very generalized overview of water rights is helpful.

Two main types of water rights constitute the vast majority of surface diversions in California: riparian rights and appropriative rights. A riparian water right generally provides a right to use the natural flow of a water body to which the land is riparian. Broadly speaking, riparian land is land that touches a lake, river, stream, or creek. Water can only be diverted under a riparian right when that water is used on the riparian parcel on land that drains back to the lake, river, stream, or creek from which the water was taken. Riparian rights remain with the property when it changes hands, although parcels severed from the adjacent water source generally lose their right to the water. Only the natural flow of water can be diverted under a riparian right. Water that is imported into a watershed from another river, stream, or creek cannot be used under a riparian right. Water cannot be stored during a wet time for use during a drier time under a riparian right. Neither can water released from an upstream storage reservoir be used by a downstream user under a riparian right. Riparian rights generally have a senior (higher relative priority) right to natural flows as against appropriative rights, and water must be available to fulfill the needs of all riparian rights before an appropriator may divert. This is not always the case, however. An appropriative right predating the patent date of riparian lands has seniority relative to the riparian right. The priorities of riparian right holders are correlative vis-à-vis each other; during a drought all share the shortage among themselves. Because a riparian right only allows the use of natural flow, it is possible to have water available under a riparian right during wetter years or months and not during drier years or months when natural flows are no longer available, including cases where stream flow is being supported by releases of previously stored water. This is particularly the case in dry years such as the current drought.

On the other hand, an appropriative water right is generally needed for water that is diverted for use on non-riparian land or to store water for use when it would not be available under natural conditions. An appropriative right holder can use natural flow, and non-natural flows like imported water from other watersheds, or irrigation return flows. Prior to 1914, appropriative water rights were acquired by putting water to beneficial use. The exact priority date of a pre-1914 appropriation can vary depending on the circumstances, but depends on either posting notice under the then applicable procedures of the Civil Code or otherwise clearly initiating the means necessary to divert or actually diverting. An appropriative water right that was acquired before 1914 is called a pre-1914 appropriative water right and is not subject to the permitting authority of the State Water Board. Appropriative water rights obtained after 1914 require a water right permit and subsequently a license issued by the State Water Board or its predecessors. Similar to pre-1914 water rights, the seniority of post-1914 water rights is based on a first-in-time concept with the date of seniority typically established by the date of the application for the permit. A water right permit confers the State Water Board's (or its

predecessor's) authorization to develop a water diversion and use project. The right to use water is obtained through actual beneficial use of water within the limits described in the permit. A water right license is issued once full beneficial use of water has been made and other conditions of a water right permit are met and constitutes the confirmation by the State Water Board (or its predecessor) of the water right. As between appropriators, junior water right holders may only divert where there is sufficient water to completely fulfill the needs of more senior appropriators.

When the amount of water available in a surface water source is not sufficient to support the needs of existing water right holders, junior appropriators must cease diversion in favor of more senior rights. However, it is not always clear to a junior diverter whether there is sufficient flow in the system to support their diversion and senior water uses downstream. It can also be difficult to determine whether releases of stored water are abandoned flows that may be diverted or whether those flows are not available for diversion because they are being released for downstream purposes. Similarly, it can be difficult for a riparian to know if water is natural flow or stored or imported water and whether, when and to what extent correlative reductions in water use are needed due to the need to share limited supplies amongst riparians. As part of administrating water rights, the State Water Board may curtail water diversions based on California's water rights priority system.

For groundwater[4] diversions, overlying rights are analogous to riparian rights. They depend on ownership of the land overlying an aquifer, are limited to reasonable use on that overlying parcel, and are shared correlatively with other overlying owners. Overlying rights cannot include municipal rights. It is also possible to obtain appropriative rights to groundwater. For waters that are underflow of surface water, or that are part of a subterranean stream, it is necessary to apply to the State Water Board for a water right permit for post-1914 appropriations. For other groundwater, known as "percolating groundwater," no permit is necessary. Groundwater and surface water rights are integrated, to the extent that they are interconnected – i.e. where a surface water diversion affects groundwater availability or vice-versa. (Hudson v. Dailey (1909) 156 Cal. 617.)

The State Water Board has continuing authority under Water Code sections 100 and 275 to enforce the requirements of the California Constitution, Article X, § 2, which directs that the water resources of the state be put to beneficial use to the fullest extent, and that water not be wasted or unreasonably used. It further provides that rights to the use of water are limited to such water as is reasonably required for the beneficial use served, and does not extend to the waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of the water.

The reasonable use doctrine applies to both surface water and groundwater, and it applies irrespective of the type of water right held by the diverter or user. (*Peabody v. Vallejo* (1935) 2 Cal.2d 351, 366-367.) What constitutes an unreasonable use, method of use, or method of diversion depends on the facts and circumstances of each case. (*People ex rel. State Water*

[4] For the purposes of the informational digest, "groundwater" refers to all diversions of sub-surface water.

Resources Control Board v. Forni (1976) 54 Cal.App.3d 743, 750.) Under the reasonable use doctrine, water right holders may be required to endure some inconvenience or to incur reasonable expenses. (*Id.* at pp. 751-752.) The State Water Board's continuing authority includes the power to enact regulations that preclude unreasonable use. (Wat. Code § 1058; Light v. State Water Resources Control Board (2014) 226 Cal.App.4th 1463, 1482.)

Status of Species

Since the settlement of the central California coast, populations of native coho salmon, Chinook salmon, and steelhead have declined dramatically. Information on coho and steelhead is provided below.

Coho Salmon

Coho salmon populations in California, including Central California Coast coho salmon (CCC coho salmon) populations and Southern Oregon/Northern California Coast coho salmon (SONCC coho salmon) populations, are regarded as particularly vulnerable and have experienced significant population declines in recent decades. Along the central California coast region, CCC coho salmon face the highest risk of extinction compared to the extinction risk for Central California Coast steelhead (CCC steelhead) and California Coastal Chinook (CC Chinook), which are the other anadromous salmonid population to inhabit the region (NMFS, 2008b). Multiple coastal watersheds historically supported large CCC coho salmon and SONCC coho salmon populations, including the Navarro River, Noyo River, Big River, Russian River, and San Lorenzo River (NMFS, 2012). CCC coho salmon were historically prevalent enough to support a commercial fishery (Brown et al., 1994; SEC, 1996). As recently as the 1980s, California's combined CCC coho salmon and SONCC coho salmon catch averaged 83,000 fish annually (Brown et al., 1994, [citing Sheehan, 1991].). CCC coho salmon and SONCC coho salmon population declines are recorded as early as the 1870s due to impacts associated with logging operations (NMFS, 2012), but CCC coho salmon and SONCC coho salmon population declines have been most significant over the past 50 years (CDFG, 2004; NMFS, 2012). CCC coho salmon and SONCC coho salmon populations in California, including hatchery stocks, are currently estimated at 6-15% of their 1940s abundances (Brown et al., 1994; CDFG, 2004), and most spawning populations of CCC coho salmon and SONCC coho salmon in California have been reduced to less than 50-100 fish (Brown et al., 1994; Moyle et al., 2008; NMFS, 2012).

As a result of CCC coho salmon population declines, the CCC coho salmon Evolutionarily Significant Unit (ESU) is listed as endangered on both federal and California state endangered species lists. The CCC coho salmon ESU includes all coho salmon populations in California found in coastal watersheds between Punta Gorda in Humboldt County and Aptos Creek in Santa Cruz County. Historically, the CCC coho salmon ESU also included tributaries to San Francisco Bay, but all CCC coho salmon populations in San Francisco Bay tributaries have been extirpated. CCC coho salmon population declines are a result of habitat degradation due to logging, agriculture, mining, urbanization, stream channelization, dams, wetland loss, water withdrawals, and unscreened diversions (Brown et al., 1994; NMFS, 2012). NMFS listed the CCC coho salmon ESU as federally threated on October 31, 1996, and reclassified the ESU as

federally endangered on June 28, 2005 due to continued CCC coho salmon population declines. The State of California listed CCC coho salmon populations south of San Francisco Bay as a state endangered species in 1995, and listed the remainder of the CCC coho salmon ESU as a state endangered species in 2005. Although the CCC coho salmon ESU is now listed as endangered under Federal and state endangered species lists, CCC coho salmon populations have continued to decline, and the ESU is now in serious danger of extinction (NMFS, 2012; CDFG, 2002). In May 2015, NMFS included the CCC coho salmon ESU in its "Species in the Spotlight" initiative, which highlighted the eight endangered species the agency considers the most at risk of extinction (NMFS, 2015).

The Russian River watershed is the largest watershed that supports a CCC coho salmon population within its historic range. Due to the watershed's large size and central location within the CCC coho salmon ESU, the Russian River CCC coho salmon population is recognized for its importance in supporting CCC coho salmon ESU recovery as a whole (NMFS, 2008b). Historically, the Russian River supported large populations of CCC coho salmon (NMFS, 2012), but Russian River CCC coho salmon population sizes have declined substantially since the 1950s as a result of development, water use, and dam construction (SWRCB, 2011). In the past, more than 30 Russian River tributaries supported wild CCC coho salmon runs, but by 2001, only one stream still supported a wild run (NMFS, 2015). Russian River CCC coho salmon populations have declined from 5,000 estimated adult returners in 1965 (CDFG, 1965), to 587 estimated returners (255 hatchery returners, 332 wild returners) in the late 1980s and early 1990s (Brown et al., 1994), to just 2-185 observed adult returners in 2000-2012 (NMFS, 2012). Additionally, the number of Russian River CCC coho salmon smolts entering the ocean is estimated to have declined 85% between 1975 and 1991 (NMFS, 2012). The Russian River CCC coho salmon population is now one of several CCC coho salmon populations considered to be at high risk of extirpation (NMFS, 2012; NMFS, 2008a; CDFG, 2002).

The Russian River Coho Salmon Captive Broodstock Recovery Program (Broodstock Program) was initiated in 2001 in response to Russian River CCC coho salmon population declines. This multi-agency partnership includes a CCC coho salmon hatchery program at the Don Clausen Warm Springs Hatchery, as well as juvenile and adult CCC coho salmon monitoring efforts. Several agencies provided funding for the Broodstock Program effort, including the US Army Corps of Engineers, NMFS, US Fish and Wildlife Service (USFWS), and Sonoma County. These agencies have continued to provide funding for the Broodstock Program effort, and CDFW has also provided funding for the Broodstock Program effort in recent years. To-date, the total cost of the ongoing Broodstock Program is estimated at $94 million (M. Dillabough, USACE, personal communication, June 4, 2015).

The initial Broodstock Program effort included the collection of 312 CCC coho salmon fry from Russian River tributaries in 2001 (B. White and M. Dillabough, USACE, personal communication, June 4, 2015). The Broodstock Program continued to collect CCC coho salmon fry in 2002 and 2003 prior to releasing any juvenile CCC coho salmon (B. White, USACE, personal communication, June 4, 2015). During the initial CCC coho salmon fry collection period (2001-2003), the Broostock Program collected a total of 711 CCC coho salmon

fry in Green Valley Creek, 117 CCC coho salmon fry in Dutch Bill Creek, and 9 CCC coho salmon fry in Mill Creek (CDFW, 2015i). Since 2004, the Broodstock Program has annually stocked multiple Russian River tributaries with juvenile CCC coho salmon. Nearly half (476,020 of 1,024,219) of the juvenile CCC coho salmon released over the past decade have been stocked in Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek, which are recognized for providing key juvenile CCC coho summer rearing habitat (CDFW, 2015i).

In recent years, Russian River adult CCC coho salmon population counts have improved, which is regarded as a sign of hope for the species in the Russsian River watershed (NMFS, 2012). Since the winter of 2000/2001, the Broodstock Program has collected population data for Russian River CCC coho salmon. All Broodstock Program minimum adult CCC coho salmon returner counts include total detections of adult CCC coho salmon returners to the Russian River basin, including both hatchery returners and natural spawners. The Broodstock Program reports minimum adult CCC coho salmon returner counts of just 2-19 returners during winters 2000/2001 through 2009/2010 (UCCE/CA Sea Grant, 2015) (Attachment 2). In comparison, Russian River minimum adult CCC coho salmon returner counts increased to 90-208 minimum adult CCC coho salmon returners for return winters 2010/2011 through 2013/2014. As of December 31, 2014, the Broodstock Program reports that a minimum of 40 adult CCC coho salmon have returned to the Russian River basin during return winter 2014/2015 (UCCE/CA Sea Grant, 2015). Broodstock Program Russian River minimum adult CCC coho salmon returner counts includes all adult CCC coho salmon recorded via Passive Intergrate Transponder (PIT) tag detections, spawner surveys, adult trapping, and video monitoring. The Broodstock Program typically monitors for adult CCC coho salmon returners through multiple methods each year. To avoid duplication in the overall count for adult CCC coho salmon returners to the Russian River basin, the Broodstock Program always reports the most conservative count: if there was a possibility for counting a single fish using more than one method, the Broodstock Program always assumes duplication and reported the smallest number.

The Broodstock Program also reports that wild juvenile CCC coho salmon counts have also improved in recent years. Wild juvenile CCC coho salmon counts have increased from an annual average of 234 during the years of 2005-2009 to an annual average of 5,895 during the years of 2010-2013 (UCCE/CA Sea Grant, 2014a). Wild juvenile CCC coho salmon counts are minimum juvenile CCC coho salmon counts for the Russian River basin detected via snorkel surveys. The Broodstock Program detected wild juvenile CCC coho salmon in the Russian River basin through several methods over the period of record.

Steelhead

The Central California Coast (CCC) steelhead Evolutionarily Significant Unit (ESU) also inhabits the Russian River watershed. The CCC steelhead ESU includes all steelhead populations from the winter-run populations in the Russian River basin south to Aptos Creek in Santa Cruz County, and the drainages of San Francisco, San Pablo, and Suisun Bays, including the tributary streams to Suisun Marsh, but excluding the Sacramento-San Joaquin River system. The Don Clausen Warm Springs Fish Hatchery, located down stream of Lake Sonoma on Dry

Creek, first released CCC steelhead in 1982. In 1992, the Coyote Valley Fish Facility was opened at the base of the Coyote Valley Dam on the East Fork Russian River, 157 kilometer from the ocean. At the Don Clausen Warm Springs Fish Hatchery, an average of 3,301 fish were trapped and 244 females were spawned during the brood years 1992–2002. At the Coyote Valley Fish Facility, an annual average of 1,947 CCC steelhead were trapped from 1993 to 2002 and an average of 124 females spawned. There are no CCC steelhead abundance estimates for the Russian River, but fish are observed. As of 1998, 100 percent of hatchery released CCC steelhead have had their adipose fin clipped. Until brood year 2000, both hatchery and naturally spawned fish were included in the broodstock in the proportion that they returned to the hatchery. Since then, only adipose-marked fish are spawned, and all unmarked CCC steelhead are relocated into tributaries of Dry Creek (NMFS, 2005a).

In 1996 NMFS concluded that the CCC steelhead ESU was in danger of extinction citing likely extirpation of populations in Santa Cruz County and in tributaries to San Francisco and San Pablo Bays, as well as apparent substantial declines in CCC steelhead number in the Russian River (NMFS, 1996). Subsequent status of reviews (NMFS, 1997; NMFS, 2005a) concluded that the CCC steelhead ESU was not presently in danger of extinction, but was likely to become so in the foreseeable future. CCC steelhead ESU were federally listed as threatened on August 18, 1997, and were reaffirmed as threatened on January 5, 2006. In the Russian River basin, CCC steelhead return in substantial numbers to the Don Clausen Warm Springs Hatchery and Coyote Valley Fish Facility, with an average of just over 7,000 steelhead returning to these facilities annually in the last 10 years. Juvenile releases during this period have averaged nearly 500,000 steelhead annually. Data on CCC steelhead population abundance of wild fish or the fraction of hatchery fish occurring on natural spawning grounds remains limited (NMFS, 2011). Like juvenile CCC coho salmon in the Russian River watershed, juvenile CCC steelhead spend the summer rearing period in Russian River tributaries. CCC steelhead begin migration upstream in late fall.

CCC Coho Salmon and CCC Steelhead Life History and Summer Rearing Needs

In California, coho salmon[5] have a relatively strict three-year life cycle, spending about half of their lives in freshwater and half in salt water (Moyle, 2002, cited in R2 Resource Consultants, 2007). CCC coho salmon migrate upstream from November through early March, with peak migration occurring during December and January (USACE, 2008; Moyle, 2002). Coho salmon spawn shortly after arriving on the spawning grounds in headwater streams (Shapovalov and Taft, 1954). The eggs hatch after incubating in the gravels for 8 to 12 weeks (Moyle, 2002, cited in R2 Resource Consultants, 2007). After hatching, the alevins remain in the gravel for 4 to 10 weeks depending on water temperatures. Upon emergence, coho salmon fry tend to move to shallow water areas where they feed and continue to grow into juveniles. Juvenile CCC coho salmon rear and overwinter in the stream until the following March or early April, when, after smoltification, they begin migrating downstream to the ocean (NMFS, 1995; Shapovalov and Taft, 1954). In California, peak downstream migration occurs from April to early May (NMFS,

[5] For purposes of this section, the terms “coho salmon” and “steelhead” are used to reference each species. “CCC” will precede references specific to the two species’ to note the Central California Coastal Evolutionarily Significant Unit.

1995; Shapovalov and Taft, 1954). Compared to other anadromous salmonids in California, coho salmon may be particularly vulnerable to extirpation due to their lengthy rearing period and relatively strict three-year life cycle (Gustafson et al., 2007). CCC coho salmon production is also highly sensitive to interannual environmental variations in stream conditions (Lawson et al., 2004).

CCC steelhead in the Russian River watershed are considered winter steelhead, or ocean-maturing steelhead. Winter CCC steelhead upstream migration generally extends from December through early April, peaking in most area streams during January and February (USACE, 2008; Moyle, 2002). Winter steelhead spawn within a few weeks to a few months from the time they enter fresh water. Peak spawning occurs January through March, but can extend into spring and early summer months. The eggs hatch in approximately three to four weeks, with fry emerging from the gravel two to three weeks later. The fry then move to shallow protected areas associated with the stream margin for several weeks (Moyle, 2002, cited in R2 Resources Consultants, 2007).

Steelhead typically spend two years in freshwater, but freshwater residence time can range from one to four years (McEwan and Jackson, 1996; Moyle, 2002, cited in R2 Resource Consultants, 2007). Emigration to the estuary or ocean can occur year around, with peaks in the late fall/early winter and late spring/early summer (USACE, 2008; Shapovalov and Taft, 1954). Steelhead typically spend one to two years in the ocean before returning to spawn for the first time. Steelhead are able to reproduce repeatedly during their lifetime, and may return to the ocean and spawn again in a later year.

The summer rearing stage for juvenile coho salmon, juvenile steelhead, and other juvenile anadromous salmonids is considered the life stage of greatest concern (CDFW, 2015i). In the Russian River watershed, the majority of precipitation occurs during the months of November through March, and streamflows gradually recede through the spring and approach very low base flows by the end of the dry season (Grantham et al., 2012). During the summer months, Russian River tributary stream flows are typically lowest, instream temperatures are warmest, and water demand is at its greatest (CDFW, 2015i). These low flow conditions are a source of stress for juvenile salmonids, which typically seek out cold water refugia in pool habitats during the summer period. Typically, juvenile CCC coho salmon and CCC steelhead seek out cold water refugia in the upper reaches of Russian River tributaries, where higher flows and lower stream temperatures may be maintained throughout the summer rearing period. Minimum flows that provide for habitat connectivity are needed to maintain juvenile salmonid intra-stream passage conditions in early summer. Instream flows are also needed to maintain habitat conditions necessary for juvenile CCC coho salmon and juvenile CCC steelhead viability throughout the dry summer months, including adequate dissolved oxygen concentrations, low stream temperatures, and high rates of invertebrate drift from riffles to pools. The importance of these passage conditions and habitat requirements is discussed in the following paragraphs.

Dissolved Oxygen

Juvenile salmonids, including juvenile CCC coho salmon and juvenile CCC steelhead, require adequate dissolved oxygen concentrations and other water quality parameters to survive the stressful summer months. During the summer rearing period, juvenile CCC coho salmon and juvenile CCC steelhead are dependent on an input of dissolved oxygen from upstream riffles (CDFW, 2015i; Obedzinski and Nossaman, 2012). Riffles and pools may lose hydrologic connectivity at low flows, which causes dissolved oxygen concentrations to drop in pools. When riffles and pools lose hydrologic connectivity, dissolved oxygen concentrations in pools often begin to drop within days, although some pools can sustain the dissolved oxygen concentrations necessary for juvenile salmonid viability for up to one month (CDFW, 2015i; Obedzinski and Nossaman, 2012; Matthews and Berg, 1997). Low dissolved oxygen concentrations can negatively impact juvenile salmonid growth, development, and behavior (Carter, 2005; Herrmann, 1958). Extreme or chronically low dissolved oxygen concentrations can also lead to fish mortality (Carter, 2005).

Stream Temperatures

Low flows, coupled with elevated stream temperatures, tend to cause stressful conditions for coldwater aquatic species, such as CCC coho salmon and steelhead (Ozaki, 1994; May and Lee, 2004). When water temperatures reach stressful levels for anadromous salmonids, juvenile salmonid growth decreases as energy is diverted to thermally compensate for marginal rearing conditions (Ozaki, 1994). Prolonged periods of stressful stream temperatures or short-term periods of extremely high temperatures can both lead to fish mortality. Juvenile coho salmon and juvenile steelhead tend to avoid rearing habitat where high stream temperatures are present, if more favorable habitat is available (Boughton et al., 2009; Madej et al., 2006; Welsh et al., 2001).

Drift and Food Source Availability

Aquatic invertebrates are a primary food source for juvenile coho salmon and juvenile steelhead (Dill and Fraser, 1984). The drift of aquatic invertebrates from riffles to pools provides an important prey source for juvenile salmonids, as aquatic invertebrate production is highest in riffle habitat (Bradford and Heinonen, 2008), but juvenile coho salmon and juvenile steelhead inhabit pools during the summer rearing period. Rates of invertebrate drift tend to be low at low water velocities and low flows (Harvey et al., 2006). Under low flow conditions, juvenile fish growth tends to decrease due to low rates of invertebrate drift and, therefore, decreased food availability (Bradford and Heinonen, 2008; Harvey et al., 2006; May and Lee, 2004). In small streams, small changes in flow can result in significant changes in prey availability from invertebrate drift (Harvey et al., 2005). Increased summer base flows in small streams can increase juvenile salmonid prey availability and improve habitat quality (Harvey et al., 2006).

Need for Emergency Regulation in Dutch Bill Creek, Green Valley Creek, Portions of Mark West Creek, and Mill Creek Watersheds

Immediate action is needed to support fish and to maintain beneficial uses of water in the Dutch Bill Creek, Green Valley Creek, portions of Mark West Creek, and Mill Creek watersheds (priority tributaries; See Attachments 20-24). CDFW and NMFS have to prevent the extirpation

of CCC coho salmon from the Russian River watershed. These four tributaries have also been identified as Coho Partnership Priority watersheds (Obedzinski and Nossaman, 2012). All four tributaries support CCC coho salmon and CCC steelhead populations, and do not contain major flow-regulating reservoirs. CCC coho salmon and CCC steelhead present in Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek are therefore at risk of extirpation due to low flow conditions. Because this is the third year of drought, all three year-classes of CCC coho salmon have been affected by the ongoing drought.

In a letter to the State Water Board Executive Director dated May 28, 2015, CDFW in collaboration with NMFS recommends the State Water Board develop emergency regulations to: (1) issue an informational order to determine the extent of current surface and sub-surface diversion operations in each of the priority watersheds; and, (2) immediately implement conservation measures to limit the amount of water extracted from these watersheds during the drought (Attachment 3; CDFW, 2015b). CDFW notes that low flow conditions in tributaries of the Russian River resulted in significant declines in salmonid population, production and survival during the 2014 season, and drought conditions have persisted in 2015. CDFW believes that conditions in these priority watersheds are quickly deteriorating and without significant water conservation efforts most if not all portions of these tributaries could experience fish mortality due to early drying of rearing habitat. CDFW states the selected tributaries have sustained perennial flow in the previous three drought years and available habitat is limited by lack of flow. The letter recognizes the lack of information on the exact number, location, and amount of diversions in these watersheds in addition to the large number of summer diversions that are cumulatively affecting the amount of water available for instream habitat. CDFW included a link to a map of Drought Priority Watersheds in the Russian River watershed and Reaches of Interest, delineates watershed boundaries for the Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek watersheds, reaches of interest, and the portions of the watersheds which contribute to the reaches of interest (Attachment 4). The CDFW and NMFS recommendations are in accord with other studies and information regarding fishery needs, as described above.

CDFW has partnered with NMFS to develop a California Voluntary Drought Initiative Program. In October 2014, April 2015, and May 2015, CDFW provided letters to all landowners within selected areas of the four priority tributary watersheds encouraging water conservation and the development of Voluntary Drought Initiative Agreements (Agreements). On April 21, 2015, the State Water Board's Division of Water Rights and the CDFW Bay Delta Region mailed a joint letter to approximately 600 riparian landowners in the upper portions of the Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek watersheds requesting that landowners enter into voluntary agreements with CDFW to help ensure enough water remains in the streams to support populations of juvenile California Central Coast coho salmon (CCC coho salmon) during the dry summer months. On April 23, 2105 the [Santa Rosa] Press Democrat published an opinion-editorial written by the Executive Director of the State Water Board, Thomas Howard, and the Director of the CDFW, Charlton H. Bonham, which described the threats facing CCC coho salmon in the priority Russian River tributaries, publicized the call for voluntary agreements, and again stated that in the absence of sustainable voluntary commitments not to take water, the State Water Board may need to pass emergency

regulations that compel curtailment of water rights in those tributaries. In addition to those cooperative efforts, CDFW encouraged residents to take additional water conservation action. In order to communicate the dire conditions of these watersheds and to encourage landowner cooperation, CDFW conducted several outreach meetings (May 14, 2015 in Occidental; May 21 in Windsor) with local stakeholders, which State Water Board staff attended. On April 29, 2015, Board members Dorene D'Adamo and Steven Moore attended a meeting with the Sonoma Farm Bureau and CDFW to discuss water issues in the Russian River watershed. On June 5, 2015, Board member Dorene D'Adamo attended a Sonoma County Winegrape Commission meeting to discuss CDFW's Voluntary Drought Initiative Program and the State Water Board's proposed emergency regulation. On June 10, 2015, CDFW and State Water Board staff attended a meeting with the Sonoma Farm Bureau to discuss the proposed emergency regulations.

As of June 12, 2015, CDFW entered into Agreements with twenty-two residential landowners to forgo irrigation of lawns, implement additional water conservation measures and provide CDFW creek access to monitor fishery and stream conditions and implement potential fish rescue actions for the 2015 summer rearing and migration periods. CDFW also entered into two Agreements with commercial agricultural operators to: 1) implement additional water conservation measures; and 2) provide CDFW and NMFS creek access to monitor fishery and stream conditions and implement potential fish rescue actions for the 2015 summer rearing and migration periods; 3) where possible, reduce instantaneous diversion rates and coordinate diversions among adjacent landowners so that instantaneous diversion rates can be limited by withdrawing water at different times; and 4) implement agricultural best management practices including, but not limited to, using low-flow sprinkler irrigation systems, soil and/or plant moisture monitoring devices to determine irrigation needs, and pressure washing cellar and winery floors with high pressure/low volume cleaning equipment fitted with shut-off nozzles.

There is a dearth of information on water diversions in the tributaries. CDFW identified a significantly greater number of diversions than those for which the Board has reported information. As a result, the State Water Board determined it is necessary to require enhanced water conservation and additional water user information for the protection of specific fisheries in four tributaries to the Russian River: Dutch Bill Creek, Green Valley Creek, portions of Mark West Creek, and Mill Creek. This emergency regulation is intended to support instream flows, dissolved oxygen concentrations, stream temperatures, and invertebrate drift conditions needed to maintain juvenile CCC coho salmon and juvenile CCC steelhead viability during the summer rearing period as well as provide passage for migrating adult CCC coho salmon and CCC steelhead during the late-fall through spring migration period.

Many Russian River tributaries naturally approach or reach intermittency in some or all of their length by the end of the summer season (Grantham et al. 2012). However, the priority tributaries maintain sub-surface connectivity with the Russian River. The four tributaries targeted in the proposed regulation were chosen, among other reasons, because they are historically perennial, providing year-round rearing habitat for salmonids (USEPA, 2005, CDFW, 2015b). Currently, the four tributaries remain perennial in their upper reaches during most years. However, due largely to development and associated water diversion, their lower

reaches often experience intermittency, causing a loss of connectivity to the mainstem Russian River at some point in the dry season; this occurs sooner during drought years and can persist into the fall. Without water conservation, the severe drought conditions of 2015 will likely cause intermittency to occur even sooner than in other years of the current drought.

The State Water Board recognizes that surface water and groundwater diversions can significantly contribute to low flow conditions in Russian River tributaries. The State Water Board previously determined that surface water and groundwater diversions both have the potential to significantly affect streamflows in the Russian River basin on a short-term basis (SWRCB, 2011). Juvenile CCC coho salmon and juvenile CCC steelhead were significantly impacted by low flows and poor habitat quality in Russian River tributaries during the past several summers of drought. While the State Water Board maintains information on self-reported surface water diversions and certain groundwater diversions in its Electronic Water Rights Information Management System (eWRIMS) database, it lacks information on the majority of groundwater wells in the Russian River watershed (and elsewhere in the state). Without such information, it is impossible to accurately quantify stream losses resulting from groundwater diversions due to the significant groundwater-surface water connectivity in the Russian River watershed.

Drought conditions exacerbate summer low flow conditions in Russian River tributaries. Russian River tributaries' summer baseflows were particularly low during the past several summers, with many lower tributary sections reaching intermittency earlier in the summer than in previous years. This finding is supported by streamflow data from the USGS gauging station at Mark West Creek near Mirabel Heights, California (USGS # 11466800) (Attachment 6). In 2014, discharge at this site fell below 0.10 cfs on July 28 and reached zero cfs by September 2, the first time on record during the current drought. By contrast, in 2010, an average year, the mean daily flow on July 28 was 8.1 cfs and on September 2 it was 2 2.1 cfs. As of June 10, 2015, daily mean flow at this station was 7.3 cfs, 70% lower than the period of record average value of of 14.6 cfs for that day of the year. In 2014, flows on June 10 were 9.7 cfs (USGS, 2015). In 2015, the majority of springtime flows have been lower than those at the same time in 2014 and the 2015 summer flows are on track to be as low, or lower, than in 2014. This is corroborated by a gauge that the State Water Board maintains on Mill Creek, below the Felta Creek confluence (Attachment 5). These data indicate an elevated risk of low flows or dry conditions from June through November 2015. Such severely reduced flows and the related poor habitat quality in Russian River tributaries have the potential to significantly impact juvenile CCC coho salmon and CCC steelhead.

Based on Broodstock Program stream surveys conducted in the summers of 2012 and 2014, it is apparent that larger sections of Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek are becoming intermittent during the summer months. Broodstock Program staff surveyed sections of Dutch Bill Creek, Green Valley Creek, and Mill Creek in 2012, and resurveyed the same stream sections in 2014. (Broodstock Program staff also surveyed a section of Mark West Creek in 2014, but did not conduct a survey in 2012.) The length of intermittent stream sections in Dutch Bill Creek, Green Valley Creek, and Mill Creek surveyed

by the Broodstock Program is greater in the summer of 2014 than in the summer of 2012. Although there was no Mark West Creek survey in 2012, State Water Board staff also believe that a larger portion of Mark West Creek was dry in summer 2014 compared to summer 2012. This finding is attributed to the ongoing drought, which exacerbated low flow conditions in the Russian River watershed and imperiled juvenile CCC coho salmon and juvenile CCC steelhead. As portions of the stream become hydraulically disconnected from each other, water quality conditions deteriorate in isolated habitat units (e.g., pools). Juvenile CCC coho salmon and juvenile CCC steelhead require low water temperatures, adequate concentrations of dissolved oxygen, and other water quality parameters which deteriorate under low or intermittent flow conditions (See Attachment 7-19; UCCE/CA Sea Grant, 2012b through UCCE/CA Sea Grant, 2012d; UCCE/CA Sea Grant, 2014f through UCCE/CA Sea Grant, 2014o).

Uncharacteristically low streamflows and poor habitat conditions throughout the Russian River basin during the summer of 2014 resulted in extremely stressful conditions for rearing juvenile salmonids. CDFW coordinated one juvenile CCC coho salmon rescue operation in the Russian River watershed in the summer of 2014, which was prompted by poor habitat conditions. This fish rescue operation was conducted on Peña Creek. Both Peña Creek and Mill Creek are tributaries to Dry Creek. CDFW reports that at the time of the rescue, hundreds of CCC juvenile coho salmon had already perished on Peña Creek. During the juvenile CCC coho salmon rescue operation, CDFW staff successfully captured 82 juvenile CCC coho salmon on Peña Creek, which were relocated to the Don Clausen Warm Springs Hatchery (N. Bauer, G. Neiland, and M. Kittle, personal communications, May 2015). Typically, CDFW prefers to relocate juvenile CCC coho salmon to nearby stream reaches rather than to Don Clausen Warm Springs Hatchery. However, due to stressful habitat conditions and a lack of instream flows throughout the watershed, CDFW was unable to locate a suitable stream site for juvenile CCC coho salmon relocation. Of 82 juvenile CCC coho salmon rescued on Peña Creek, 81 perished during the rescue operation or at the Don Clausen Warm Springs Hatchery shortly after relocation. The fish likely perished as a result of chronic stress due to high temperatures and poor water quality conditions on Peña Creek during the period preceding the fish rescue (G. Neillands, CDFW, personal communication, March 2015).

In 2015, CDFW staff, with the assistance of University of California (UC) Cooperative Extensions and the California Sea Grant Extensions (UCCE/CA Sea Grant) personnel, rescued CCC coho salmon and CCC steelhead from remaining shallow pools within several Russian River tributaries. On May 1, 2015, CDFW staff rescued CCC coho salmon and steelhead from the remaining shallow pools on lower Felta Creek, tributary to Mill Creek; a total of 32 coho smolts, 76 CCC coho young-of-the-year (YOY), and 21 CCC steelhead parr were rescued on lower Felta Creek(CDFW, 2015a). On May 4, 2015, CDFW staff rescued CCC coho salmon and steelhead from shallow pools on lower Peña Creek, tributary to Dry Creek; a total of 32 CCC coho smolts, 593 steelhead YOY, and six steelhead parr were rescued on Peña Creek (CDFW, 2015b). On May 6, 2015, CDFW staff rescued CCC coho salmon and CCC steelhead from isolated shallow pools on lower Porter Creek tributary to the Russian River mainstem; a total of 202 CCC coho smolts, 101 CCC steelhead YOY, seven CCC steelhead smolts and two CCC steelhead parr (CDFW, 2015c). On May 12, 2015, CDFW staff conducted a second

rescue of CCC coho salmon and CCC steelhead from the remaining shallow pools on lower Peña Creek, tributary to Dry Creek; a total of 12 CCC coho smolts, 78 CCC steelhead YOY, and one CCC steelhead parr were rescued on lower Peña Creek (CDFW, 2015d). On May 15, 2015, CDFW staff rescued CCC coho salmon and CCC steelhead from the disconnected shallow pools on Mill Creek, tributary to Dry Creek; a total of 206 CCC coho smolts, 129 CCC steelhead YOY, and one CCC steelhead smolt were rescued on Mill Creek (CDFW, 2015e). On June 2, 2015, CDFW staff rescued CCC coho salmon and CCC steelhead from the remaining isolated pools in two small unnamed tributaries to Green Valley Creek, a total of 111 CCC coho smolts, 167 CCC coho YOY, 19 CCC steelhead YOY, and four CCC steelhead parr. Stream flows and water quality conditions within the Russian River tributaries continue to rapidly decline with the ongoing drought (CDFW, 2015f).

If drought conditions persist beyond the fall, low flows could threaten CCC coho salmon and CCC steelhead adult in-migration and spawning in the winter and spring, as well as juvenile out-migration in the spring. Low flow conditions can hinder or prevent passage of in-migrating salmonids to the quality spawning habitat found in the upstream reaches of Russian River tributaries. Successful spawning is crucial to the persistence of salmonid populations. Coho are especially sensitive to disruptions in annual spawning, due to their predominant three-year life cycle, and a failed spawning season can result in the loss of an entire coho year class (Moyle, 2002; Shapovalov and Taft, 1954). Depending largely on flow conditions, adult CCC coho salmon upstream migration can occur from November through early March, with peak migration occurring December through January (USACE, 2008; Moyle, 2002). Adult CCC steelhead typically migrate upstream from December through early April, with a peak in January and February (USACE, 2008; Moyle, 2002). Likewise, sufficient streamflow needs to be present to allow for the downstream migration of juvenile salmonids from the upper reaches to the estuary and ocean. Juvenile CCC coho salmon typically migrate downstream March through June, with a peak migration in April through early May (NMFS, 1995; Shapovalov and Taft, 1954). Juvenile CCC steelhead may migrate downstream throughout the year, with peak migration occurring in late October through mid-December and in April through June (USACE, 2008; Shapovalov and Taft, 1954). It is essential that sufficient water remain in the stream during these crucial periods.

The State Water Board recognizes the severity of drought conditions in the Russian River tributaries, and the drought's potential impacts to juvenile CCC coho salmon and juvenile CCC steelhead viability in Russian River tributary watersheds in the summer of 2015, as well as potential impacts to passage of migrating juvenile CCC steelhead and CCC coho salmon and adult CCC steelhead and CCC coho in the fall of 2015, and the potential for continued drought to affect winter and early spring migratory conditions for adult and juvenile CCC coho and CCC steelhead. CDFW reports that outdoor irrigation of ornamental landscapes and turf represents a significant percentage of domestic water use in the Russian River watershed, and that this domestic use of water represents a significant contribution to the lack of summer flows in Russian River tributaries (CDFW, 2015b). A reduction in water use in Dutch Bill Creek, Green Valley Creek, portions of Mark West Creek, and Mill Creek watersheds is anticipated to result in improved flow and habitat conditions for juvenile salmonids compared to summer 2014. The

State Water Board seeks to reduce water consumption and increase instream flows in the Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek watersheds to reduce impacts to juvenile CCC coho salmon and juvenile CCC steelhead mortality.

Watershed Descriptions

Dutch Bill Creek

Dutch Bill Creek is a tributary to the Russian River, located in Sonoma County. The Dutch Bill Creek watershed spans approximately 12 square miles, and the watershed ranges in elevation from 12-1477 feet (USGS, 2015). Mean annual precipitation in the watershed is 56 inches (USGS, 2015). Nearly half of the Dutch Bill Creek watershed area is made up of irrigated crop lands (DWR, 1999). Major crop types in the Dutch Bill Creek watershed include pasture and vineyards (DWR, 1999). Surficial geology in the Dutch Bill Creek watershed consists primarily of the Franciscan Complex with small areas of the Wilson Grove Formation in the upper watershed (CDMG, 1982).

In 2006, NMFS designated Dutch Bill Creek as critical habitat for CCC steelhead (50 C.F.R. § 226.211 (2006)), and CDFW and NMFS recognized Dutch Bill Creek for its high aquatic resource value. Coho salmon were observed in Dutch Bill Creek by CDFW staff in 2002, but were not observed during surveys in 2001 (CDFG, 2004). In more recent years, both juvenile and adult CCC coho salmon have been regularly documented in Dutch Bill Creek (UCCE/CA Sea Grant, 2015). Juvenile CCC coho salmon have been documented through a combination of snorkel surveys and trapping of migrating CCC coho salmon each summer spanning the 2011-2014 period (UCCE/CA Sea Grant, 2015). Spawner surveys and PIT-tag detections have documented adult CCC coho salmon in Dutch Bill Creek during the spawning period from the 2010/2011 winter season though the 2013/2014 winter season (UCCE/CA Sea Grant, 2015). Data are not yet available for the 2014/2015 winter season. Information on adult CCC steelhead in Dutch Bill Creek is not readily available. In 2014, UCCA/CA Sea Grant observed 3,147 juvenile CCC steelhead on Dutch Bill Creek (see Attachment 15; UCCE/CA Sea Grant, 2014k).

O'Connor Environmental, Inc. is currently conducting hydrologic modeling for CDFW for the Dutch Bill Creek and Green Valley Creek watersheds. This modeling effort is funded by the CDFW Fisheries Restoration Program Grant, and includes a simulation of the complete hydrologic cycle, including groundwater-surface water interaction within the two watersheds. As of June 2015, O'Connor Environmental, Inc. has calibrated the model, and expects to have a complete model and report available in the summer of 2015 (O'Connor, 2015). Preliminary modeling results show that there are significant opportunities to improve salmonid habitat extent and quality in the Dutch Bill Creek watershed, based on a comparison of unimpaired (e.g., no diversions) versus impaired (current) conditions in the watershed (O'Connor Environmental, Inc., 2015).

CDFW has identified a reach of interest and corresponding upper portion of the watershed for CCC coho salmon rearing in the Dutch Bill Creek watershed. The upper portion of the watershed encompasses 9.8 square miles, and is defined as the portion of the watershed upstream of the confluence with Tyrone Gulch at the Latitude/Longitude of 38.44776° N and 122.99979° W (Gray, 2015; See Attachment 3).

There are 25 water rights reported in the Dutch Bill Creek watershed, including: 12 appropriative rights, two stock pond certificates or registrations, three small domestic registrations, six riparian rights, and two unspecified[6] water rights. The 25 water rights have a total average (2010-2013) annual reported demand of approximately 121 acre-feet. The reported beneficial uses in the watershed are irrigation, fire protection, stock watering, recreational, domestic, dust control, and fish and wildlife preservation and enhancement. Of the 25 water rights reported in the Dutch Bill Creek watershed, 22 are active, one is inactive[7], and two are of unknown status. Six of the 22 active water rights claim domestic as a beneficial use. The State Water Board has very limited knowledge of groundwater diversions in Dutch Bill Creek watershed. There are no readily available real-time USGS or DWR flow records for the Dutch Bill Creek watershed. Other groups have collected depth measurements at multiple locations on Dutch Bill Creek, but this data are not continuous or readily available.

Green Valley Creek

Green Valley Creek is a tributary to the Russian River, located in Sonoma County. The Green Valley Creek watershed spans approximately 38 square miles, and the watershed ranges in elevation from 23-925 feet (USGS, 2015). Mean annual precipitation in the Green Valley Creek watershed is 45 inches (USGS, 2015). The Green Valley Creek watershed is almost entirely privately owned (CDFG, 2006a), and common land uses include: apple and pear orchards, vineyards, livestock pasture, and rural development (DWR, 1999; CDFG, 2006a; GRRCD, 2013). The watershed's topography includes low-gradient alluvial valleys in the lower watershed and steep terrain in the upper watershed, including hillsides with gradients above 80% (GRRCD, 2013). The underlying geology of the watershed is dominated by the Franciscan Formation and Wilson Grove Formation (Laurel Marcus & Associates, 2003). The Green Valley Creek watershed's climate is characterized as Mediterranean, with frequent fog and milder temperatures in the forested uplands due to its proximity to the Pacific Ocean (GRRCD, 2013). Major tributaries to Green Valley Creek include Atascadero Creek, Purrington Creek, and Harrison Creek (CDFG, 2006a).

Agricultural activities, rural development and other land use activities (e.g., timber harvest, removal of riparian vegetation, road construction) have altered the watershed's physical characteristics (GRRCD, 2013) and have contributed to CCC coho salmon habitat degradation. In addition to land use changes, summer diversions, including near-stream groundwater withdrawals, have negatively impacted juvenile CCC coho salmon that rear in the Green Valley

[6] Unspecified water rights are undetermined water rights associated with a State Water Board Enforcement Investigation.

[7] A riparian water right becomes inactive when a diverter with a riparian claim is no longer actively diverting water. Riparian water rights are not lost due to periods of inactivity.

Creek watershed during the summer months (GRRCD, 2013). Based on monitoring data collected by the Gold Ridge Resource Conservation District from 2009-2013, water quality concerns in the Green Valley Creek watershed during the summer months include: low flows, high water temperatures, and low dissolved oxygen levels (GRRCD, 2013). According to studies conducted by Gold Ridge Resource Conservation District, increased summer flows would likely improve temperature and dissolved oxygen conditions in the Green Valley Creek watershed (GRRCD, 2013).

In 2006, NMFS designated Green Valley Creek as critical habitat for CCC steelhead (50 C.F.R. § 226.211 (2006)). Green Valley Creek, Atascadero Creek, and Purrington Creek are considered important salmonid streams in the Russian River basin by CDFW and NMFS (GRRCD, 2013). The upper watershed, including Upper Green Valley Creek and Purrington Creek, provides favorable CCC coho salmon spawning and rearing habitat (Brown and Moyle, 1991; CDFG, 2006a, CDFG, 2006b). In a 2001 fish survey, Green Valley Creek was one of only three Russian River tributaries observed by CDFW to contain CCC coho salmon (CDFG, 2002). In more recent years, during the summers of 2010-2014, juvenile CCC coho salmon have been documented in Green Valley Creek through a combination of snorkel surveys and migrant trapping. (UCCE/CA Sea Grant, 2015). Spawner surveys and PIT-tag detections have document adult CCC coho salmon in Dutch Bill Creek during the spawning period from the 2010/2011 winter season thought the 2013/2014 winter season (UCCE/CA Sea Grant, 2015). Juvenile CCC steelhead are also consistently documented in the Green Valley Creek watershed (CDFG, 2006a). According to studies conducted by Gold Ridge Resource Conservation District, factors which negatively impact CCC coho salmon populations in the Green Valley Creek watershed include: low summer flows, lack of riparian cover, lack of instream habitat complexity, summer surface water diversions, and near-stream groundwater withdrawals (GRRCD, 2013). Information on adult CCC steelhead in Green Valley Creek is not readily available. In 2014, UCCE/CA Sea Grant observed 1131 juvenile CCC steelhead on Green Valley Creek (see Attachment 17; UCCE/CA Sea Grant, 2014m).

As mentioned in the Dutch Bill Creek watershed description, O'Connor Environmental, Inc. is currently conducting hydrologic modeling for the Dutch Bill Creek and Green Valley Creek watersheds. Preliminary modeling results show that there are significant opportunities to improve salmonid habitat extent and quality in the Green Valley Creek watershed, based on a comparison of unimpaired (i.e., no diversions) versus impaired (current) conditions in the watershed (O'Connor Environmental, Inc., 2015).

CDFW has identified a reach of interest and corresponding upper portion of the watershed for CCC coho salmon rearing in the Green Valley Creek watershed. The upper portion of the watershed encompasses 10.2 square miles, and is defined as the portion of the watershed upstream of the confluence with Atascadero Creek at the Latitude/Longitude of 38.44841° N and 122.88697° W (Gray, 2015; See Attachment 3).

There are 44 water rights reported in the Green Valley Creek watershed, including 17 appropriative water rights, three small domestic registrations, 20 riparian rights, two non-jurisdictional, and two unspecified water rights. The 44 water rights have a total average (2010-2013) annual reported demand of approximately 156 acre-feet. The reported beneficial uses in the watershed are irrigation, domestic, stock watering, fire protection, recreation, aquaculture, frost protection, heat control, and fish and wildlife preservation and enhancement. Of the 44 total water rights reported in the Green Valley Creek watershed, 33 are active, seven are inactive, two are of unknown status, and two are non-jurisdictional[8]. Seven of the 33 active water rights claim domestic as a beneficial use. There are no pre-1914 appropriative water rights in the Green Valley Creek watershed. Water supply and diversions in the Green Valley Creek watershed are governed by a series of Water Rights Orders and Water Rights Decisions, and surface water in the watershed is fully appropriated between June 15 and October 31 (SWRCB, 1998). Water demand is considered high within the Green Valley watershed, and the greatest surface water demand is associated with domestic and agricultural uses (GRRCD, 2013). Summer flows in lower Green Valley Creek are exacerbated by summer diversions, and instream flows average just 1.0-1.5 cfs (CDFG, 2006a). There are no readily available real-time USGS or DWR flow records for the Green Valley Creek watershed. Other groups have collected depth measurements at multiple locations on Green Valley Creek, but this data is not continuous or readily available.

Mark West Creek

The Mark West Creek watershed is defined in Section 876 (c)(1)(A) of the proposed regulation as USGS Watershed Boundary Dataset- Hydrologic Unit Code (HUC) 180101100706 for the purposes of this regulation. This definition includes all areas upstream of the confluence of Mark West Creek with the Laguna de Santa Rosa, as well as the main channel of Mark West Creek downstream of the Laguna de Santa Rosa to the confluence with the Russian River[9]. The Mark West Creek watershed (HUC 180101100706) spans approximately 57 square miles and ranges in elevation from 150-2400 feet (USGS, 2004, cited in SRCD, 2008). The Mark West Creek watershed typically receives 37-51 inches of annual precipitation, which consists primarily of rainfall (SRCD, 2008). The Mark West watershed is underlain by the Franciscan Complex, Coast Range ophiolite, and the Great Valley sequence (USGS, 2004, cited in SRCD, 2008).

Mark West Creek is recognized as a historical CCC coho salmon stream (Brown and Moyle, 1991). In 2006, NMFS designated Mark West Creek as critical habitat for CCC steelhead (50 C.F.R. § 226.211 (2006)). CDFW and NMFS recognize the Mark West Creek watershed is recognized for its superior CCC coho salmon spawning and rearing habitat. In recent years, CCC coho salmon have been recorded in Mark West Creek (SEC, 1996; CDFG, 2002; SRCD, 2008), although observed CCC coho salmon populations are reportedly small (SEC, 1996). CDFW observed CCC coho salmon in Mark West Creek in 2001, but not during surveys in 2000 or 2002 (CDFG, 2004). Juvenile CCC coho salmon have also been documented in Mark West

[8] Non-jurisdictional waters are those not subject to the permitting authority of the State Water Board, such as sheetflow.

[9] The above definition excludes Windsor Creek, the Laguna de Santa Rosa and their tributaries, though these are part of the larger Mark West Creek watershed (HUC 1801011007), which spans approximately 254 square miles.

Creek including all summers spanning 2011-2014 (UCCE/CA Sea Grant, 2015). CDFW has also observed juvenile CCC steelhead rearing in Mark West Creek during multiple surveys from the 1960s-2000s (CDFG, 2002; SRCD, 2008).

Although Mark West Creek is characterized as relatively undeveloped (Baumgarten et al., 2014; SEC, 1996), a variety of land use changes have contributed to changes in stream conditions. Historic land uses included ranching and timber harvesting (SRCD, 2008), and current land use patterns include forest and chaparral, grassland/pasture, residential areas, vineyards, orchards, and other miscellaneous land uses (DWR, 1999; SRCD, 2008). There is also evidence that significant changes have occurred in the channel alignment of lower Mark West Creek over the past 150 years as a result of anthropogenic diversions and, possibly, due to natural course migration (Baumgarten et al., 2014). These channel alignment changes have altered flow and sediment dynamics in lower Mark West Creek, and have resulted in impacts to ecological and geomorphic functioning (Baumgarten et al., 2014). Lower Mark West Creek is characterized by high rates of sediment deposition and poor quality fish habitat, which is a result of these changes in channel alignment (Baumgarten et al., 2014). Alternations to the lower watershed may have impacts on juvenile CCC coho salmon and juvenile CCC steelhead out-migration as well as migrating adult CCC coho salmon and adult CCC steelhead.

CDFW has identified a reach of interest and corresponding upper portion of the watershed for CCC coho salmon rearing in the Mark West Creek watershed. The upper portion of the watershed encompasses 36.2 square miles, and is defined as the portion of the watershed upstream of the confluence with an unnamed tributary that flows parallel to western Riebli Road at the Latitude/Longitude of 38.5066° N and 122.72607° W (Gray, 2015; See Attachment 3).

There are 91 water rights reported in the Mark West Creek watershed, including 50 appropriative rights, six small domestic registrations, and 35 riparian water rights. The 91 water rights have a total average (2010-2013) annual reported demand of approximately 515 acre-feet. The reported beneficial uses in the watershed are irrigation, domestic, stock watering, recreation, heat control, frost protection, fish and wildlife preservation and enhancement, and other. Of the 91 total water rights reported in the Mark West Creek watershed, 84 are active, and seven are inactive. Eight of the 84 active water rights claim domestic use as a beneficial use. Significant surface water and groundwater diversions occur in the Mark West Creek watershed during the summer, which can cause the stream to become intermittent (Merritt-Smith Consulting, 2003, cited in SRCD, 2008). Groundwater extractions in the Mark West Creek watershed appear to be occurring at an unsustainable rate, and the depth to water in new wells increased by about 100% over the period of 1940-1990 (SRCD, 2008). USGS maintains one streamflow gauge (USGS #11466800) at Mark West Creek near Mirabel, which has recorded real-time streamflows since 2007. Over the period of record, the gauge has recorded highly variable streamflow within the watershed, including winter peak flows of up to 7,200 cfs, as well as very low to zero summer flows (USGS, 2013).

Mill Creek

Mill Creek is a tributary to Dry Creek, which is a tributary to the Russian River. The Mill Creek watershed spans approximately 23 square miles in Sonoma County (USGS, 2015). Mean annual precipitation in the Mill Creek watershed is 53 inches, and the watershed ranges in elevation from 73-1,931 feet (USGS, 2015). Major tributaries to Mill Creek include Wallace Creek, Felta Creek, and Palmer Creek. Nearly the entire Mill Creek watershed includes irrigated lands (DWR, 1999). Major crop types in the Mill Creek watershed include: vineyards, flowers, and Christmas tree farms (DWR, 1999). Surficial geology in the Mill Creek watershed consists primarily of sandstones associated with the Franciscan Complex (CDMG, 1982).

In 2006, NMFS designated Mill Creek as critical habitat for CCC steelhead (50 C.F.R. § 226.211 (2006). NMFS and CDFW consider Mill Creek an important salmonid stream in the Russian River basin. In recent years, there are numerous observations of coho salmon in Mill Creek and its tributaries: Wallace Creek, Felta Creek, and Palmer Creek. CDFW surveyed Mill Creek in 2000-2002, and did not observe CCC coho salmon in Mill Creek or any other stream in the Dry Creek watershed. (CDFG, 2004). However, juvenile CCC coho salmon have been documented consistently through a combination of snorkel surveys and migrant trapping in the Mill Creek watershed during the 2005-2014 period (UCCE/CA Sea Grant, 2015). Many of these juvenile CCC coho salmon observations occurred in Felta Creek. Adult CCC coho salmon have also been documented in the Mill Creek watershed via spawning surveys and PIT tag detections in winters spanning the period of 2006/2007 winter through 2013/2014 winter (UCCE/CA Sea Grant, 2015). Information on adult CCC steelhead in Mill Creek is not readily available. In 2014, UCCE/CA Sea Grant observed 1,745 juvenile CCC steelhead on Mill Creek and its tributaries (see Attachment 19; UCCE/CA Sea Grant, 2014o). As discussed above, in May 2015, CDFW staff, with the assistance of UCCE/CA Sea Grant personnel, rescued juvenile CCC coho and CCC steelhead in the Mill Creek watershed.

CDFW has identified a reach of interest and corresponding upper portion of the watershed for CCC coho salmon rearing in the Mill Creek watershed. The upper portion of the watershed encompasses 22.1 square miles, and is defined as the portion of the watershed below the confluence with Felta Creek at the Latitude/Longitude of 38.58098° N and 122.88306° W (Gray, 2015; See Attachment 3).

There are 50 water rights reported in the Mill Creek watershed, including 23 appropriative rights, one stock pond certification or registrations, four small domestic registrations, and 22 riparian water rights. The 50 water rights have a total average (2010-2013) annual reported demand of approximately 233 acre-feet. The reported beneficial uses in the watershed are irrigation, domestic, stock watering, recreation, fish and wildlife preservation and enhancement, aquaculture, fire protection, frost protection, heat control, and other. Of the 50 total water rights reported in the Mill Creek watershed, 44 are active, and six are inactive. Twenty-two of the 44 active water rights claim domestic as a beneficial use. There are no readily available real-time USGS or DWR flow records for the Mill Creek watershed. Other groups have collected depth measurements at multiple locations on Mill Creek, but this data is not continuous or readily available.

Public Water Suppliers

Fifty-seven water suppliers supply water to the public within the four priority watersheds. Seven water suppliers are publically owned, four of which are schools or school districts. Five water suppliers (Camp Meeker Water System, Sweetwater Springs County Water District, the Occidental Community Service, Forestville County Water District and the Russian River County Water District) receive all water from outside the priority watersheds.

Dutch Bill Creek Watershed

In the Dutch Bill Creek watershed, there are fourteen water suppliers. The Camp Meeker Water System, the Sweetwater Springs County Water District, and Occidental Community Services District receive all water from outside the Dutch Bill Creek watershed. Water users whose only supply of water comes from these providers will be exempt from the enhanced conservation measures in section 876 subdivision (d). All other water suppliers and those they serve will potentially be required to implement the enhanced water conservation measures. However only those located in the upper watershed will be initially required to implement the measures. One water supplier, Occidental Community Services District, is publically owned; all other water suppliers in the watershed are privately owned. The Sweetwater Springs County Water District has more than 3,000 service connections and is subject to the existing Drought Emergency Water Conservation Emergency Regulation (Article 22.5 Sec. 865).

Green Valley Creek Watershed

In the Green Valley Creek watershed, there are 23 water suppliers. Forestville County Water District and the Russian River County Water District receive all water from outside the watershed and are both publically owned. Water users whose only supply of water comes from these providers will be exempt from section 876 subdivision (d). All other water suppliers and those they serve will potentially be required to implement the enhanced water conservation measures. However only those located in the upper watershed will be initially required to implement the measures. There are five publically owned water suppliers, the two previously mentioned water districts and three schools. No water suppliers have 3,000 or more service connections. Therefore, no water suppliers in the Green Valley Creek watershed are subject to the existing Drought Emergency Water Conservation Emergency Regulation (Article 22.5 Sec. 865).

Mark West Creek Watershed

In the Mark West Creek watershed, as defined in this proposed emergency regulation, there are nine water suppliers. None of the water suppliers in the Mark West Creek watershed, as defined by this proposed emergency regulation, receive all water from outside the watershed. All water suppliers and those they serve will be potentially required to implement the proposed the enhanced water conservation measures. However only those located in the upper watershed will be initially required to implement the measures. All water suppliers in the Mark West Creek watershed, as defined by this proposed emergency regulation, are privately owned and have less than 3,000 service connections. Therefore, no water suppliers in the Mark West Creek watershed, as defined in this proposed emergency regulation, are subject to the existing Drought Emergency Water Conservation Emergency Regulation (Article 22.5 Sec. 865).

Mill Creek Watershed
In the Mill Creek watershed, there is only one water supplier: the West Side Union School District. West Side Union School District is a publically owned water supplier that uses water sources from within the watershed. All water suppliers and those they serve will be potentially required to implement the proposed enhanced conservation measures. However only those located in the upper watershed will be initially required to implement the measures. No water suppliers have 3000 or more service connections. Therefore, no water suppliers in the Mill Creek watershed are subject to the existing Drought Emergency Water Conservation Emergency Regulation (Article 22.5 Sec. 865).

Informative Digest

Summary of Existing Laws and Regulations
A general description of water rights law is set forth above, under "water rights framework" including a discussion of the water right priority system; and the constitutional prohibition against the waste, unreasonable diversion, unreasonable method of diversion, or unreasonable use of water. This section describes the State Water Board's existing drought emergency regulations governing water conservation and informational orders.

Under existing law, end users of potable water are prohibited from taking certain actions, including irrigating outdoor ornamental landscapes in a manner that causes runoff or within 48 hours of measurable rainfall, applying potable water to driveways and sidewalks, and washing motor vehicles with potable water or with a hose that is not fitted with an automatic shut-off nozzle. (Cal. Code Regs., tit. 23, § 864.). The existing Drought Emergency Water Conservation Emergency Regulation further requires all self-supplied commercial, industrial, and institutional water users to reduce potable water usage. Additional requirements for public water suppliers to reduce potable usage under the regulation do not apply to individual diversions that are either instead of or supplemental to public water supplies.

Under existing Water Code section 1051, the State Water Board has the authority to investigate all stream systems in the state. On March 17, 2015, the State Water Board approved a drought emergency regulation that bolstered the Board's informational order authority under section 879, subdivision (c). The drought emergency regulation on informational orders provides the State Water Board with an enforceable mechanism to investigate drought-related water right matters, in response to four specific circumstances: 1) complaints of interference with water rights by other water right holders, diverters or users; 2) claims of previously unasserted riparian or pre-1914 rights in response to curtailment notices or investigations; 3) claims of a right to divert under a contract or water transfer not previously approved by or filed with the Board; and 4) receipt of information that indicates actual or threatened waste, unreasonable use, unreasonable method of diversion, or unlawful diversions. The regulation is focused on the ability to acquire information on specific known or alleged diversions for which there is some indication that the diversion may not be in accord with water rights law.

Description and Effect of Proposed Regulation

Proposed section 876 establishes drought emergency enhanced water conservation requirements, and authorizes the State Water Board to issue surface water and groundwater informational orders to collect additional water user information in the Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek watersheds. Proposed section 876, subdivision (a) sets forth definitions used in the section. Proposed section 876, subdivision (b) requires compliance with conservation requirements and informational orders. Proposed section 876, subdivision (c) defines the boundaries of the watersheds for purposes of applying the regulation. Proposed section 876, subdivision (d) requires mandatory water conservation by parties located in the four tributary watersheds. These mandatory water conservation requirements are intended to have an immediate effect, and will help to maintain the summer base flows and habitat conditions (e.g., adequate dissolved oxygen concentrations, low stream temperatures, and invertebrate drift) needed to support juvenile coho salmon and juvenile steelhead viability during drought conditions. Proposed section 876, subdivision (e) authorizes the State Water Board to issue informational orders for surface water and groundwater diversions. Information collected through the issuance of informational orders will inform the State Water Board's understanding of total water demand and the influence of groundwater diversions on instream flows in the four tributary watersheds.

Proposed section 876, subdivision (f) requires that a diverter of a new surface or sub-surface diversion comply with any informational order issued for the particular watershed where the new diversion is located in a particular watershed prior to commencing the new diversion. This will prevent information gathered under the informational orders from becoming incomplete during the pendency of the emergency regulations, and will promptly inform the State Water Board of new diversions that have the potential to impact CCC salmon or CCC steelhead habitat. Proposed section 876, subdivision (g) clarifies that electronic notice is sufficient for notices and updates regarding the emergency regulations. This allows the decisions by the Deputy Director regarding the extent of conservation measures and their potential lifting; any general communication regarding informational orders; and information reporting requirements for new diversions to be communicated efficiently with the affected water users.

Information collected through the issuance of informational orders could be used to inform State Water Board curtailment decisions. Diverters in these four tributary watersheds could be curtailed under existing curtailment authority in the order of priority as necessary to protect senior users. In the absence of such information, it is difficult to know whether conservation efforts alone will suffice. Such information could also inform the decision whether to mandate additional conservation requirements or other steps short of issuing curtailments.

This emergency regulation is a logical first step to help improve instream flow and habitat conditions for juvenile CCC coho salmon and CCC steelhead in the priority watersheds. If this emergency regulation is ineffective in improving instream flows and habitat conditions for juvenile salmonids, the State Water Board may reevaluate its efforts. Additional measures, including the establishment of minimum instream flows, additional use restrictions and issuing curtailment orders, may be necessary if enhanced water conservation measures do not improve juvenile CCC coho salmon and CCC steelhead rearing and migration conditions.

Proposed Section 876, Subdivision (d)

Proposed section 876, subdivision (d) requires mandatory enhanced water conservation by all parties in the most critical summer rearing areas of the Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek watersheds, to prevent the waste and unreasonable use of water, and to maintain habitat conditions needed to support coho salmon and steelhead viability. The Deputy Director may extend the conservation requirements to lower areas of the four watersheds after consultation with CDFW or NMFS and if necessary in light of future weather patterns and given the response in the upper watershed. The Deputy Director may also lift the enhanced conservation requirements after consultation with CDFW or NMFS, if and when streamflows return to such a level that CCC coco salmon and CCC steelhead habitat would be protected even in the absence of enhanced conservation. Proposed section 876, subdivision (d) prohibits certain water uses and restricts certain activities, except where necessary to address an immediate health and safety need or where used exclusively for irrigation for commercial agricultural use meeting the definition of Government Code Section 51201, subdivision (b).

The State Water Board intends to implement the conservation measures described under proposed section 876, subdivision (d) using a seasonal approach, based on coho salmon and steelhead seasonal life history and habitat requirements. Proposed section 876, subdivision (d) immediately applies to the upper Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek watersheds, where CCC coho salmon and CCC steelhead rearing occurs during the summer months. CDFW has identified critical habitat locations in the upper watersheds where emergency drought flows are needed to prevent significant mortality. It is not necessary to maintain anadromous salmonid passage conditions throughout each tributary watershed (i.e., in the lower portions of the watersheds) during the summer months because neither adult migration nor juvenile out-migration tend to occur during the dry summer months. However if drought conditions persist to the extent that water diversions could affect the late-fall through spring adult and juvenile migration periods, the conservation requirements in section 876, subdivision (d) may need to be expanded to the remainder of the watersheds listed in proposed section 876, subdivision (c)(1), or portions thereof as described in subdivision (d)(3).

Proposed section 876, subdivision (d) may apply to the upper and lower Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek watersheds during the late-fall months, because adult CCC steelhead and adult CCC coho salmon migration occurs during the fall months and upstream passage is required throughout each tributary watershed during this time. Juvenile CCC steelhead and juvenile CCC coho salmon out-migration may also occur during the late-fall months. It is anticipated that proposed section 876, subdivision (d) will remain effective until Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek streamflows increase following the first, or series of, significant fall storm events. If anticipated precipitation fails to appear, the regulation could remain in effect for winter through spring migration periods.

It is important to note that all Californians, including all parties located in these four priority Russian River tributary watersheds, are mandated to meet the end-user water conservation requirements under the existing Drought Emergency Water Conservation Emergency Regulation. (Cal., Code Regs., tit. 23, div. 3, ch. 2, art. 22.5) The Drought Emergency Water Conservation Emergency Regulation adopted May, 5, 2015 was originally approved by the Board on July 15, 2014.

The May 5, 2015 Drought Emergency Water Conservation Emergency Regulation consists of four main types of requirements: (1) a prohibition on certain irrigation practices that use potable water; (2) a requirement that all urban water suppliers, as defined, reduce their total potable water production by a defined percentage; (3) an order that other distributors of public water supply, as defined, reduce potable water consumption; (4) and a requirement for all self-supplied commercial, industrial, and institutional water users to reduce potable water usage. The existing Drought Emergency Water Conservation Regulation also includes public supplier reporting requirements and tools to ensure compliance. All of these requirements are intended to safeguard urban water supplies in the event of continued drought.

Proposed section 876, subdivision (d) requires that all parties in the Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek watersheds undertake enhanced water conservation measures, in addition to the end-user requirements specified in the Drought Emergency Water Conservation Emergency Regulation that currently apply to all Californians. Given the low flows in the four tributaries resulting from diversions of surface and sub-surface water in the watersheds, and exacerbated by the current drought conditions, it is necessary for the protection of the state- and federally- listed species in these watersheds to require additional limitations. The proposed regulation targets discretionary water uses for these additional limitations. Water use prohibited by the proposed regulation would subject the user to enforcement for both a violation of the regulation under Water Code section 1846 and a criminal infraction, punishable by administrative civil liability of up to $500 per day and a fine of up to $500 per day, respectively. These additional mandatory enhanced water conservation measures are appropriate and necessary under current drought conditions in the Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek watersheds to protect specific fisheries. Specifically, proposed section 876, subdivision (d)(1) includes the following requirements:

A. A prohibition on the application of water, except gray water to ornamental turf, but not on turf used for community recreation;
B. A prohibition on runoff from outdoor irrigation;
C. A two day per week limit on watering landscapes, except for where gray water is used;
D. A prohibition on the application of water, except gray water, between the hours of 8:00AM and 8:00PM, Pacific Standard Time;
E. A prohibition on the washing of motor vehicles, except where gray water is used or at a carwash where the water is part of a recirculating system;
F. A prohibition on the application of water to driveways and sidewalks;
G. A prohibition on the use of water, except gray water, to fill or refill decorative, ponds, fountains, and other decorative water features;

H. A prohibition on the use of water, except gray water, in a fountain or other decorative water feature, except where the water is part of a recirculating system; and
I. A prohibition on irrigation during and within 48 hours after measureable rainfall;

The regulation provides for exceptions to these restrictions for immediate health and safety needs and for commercial agricultural use.

Proposed section 876, subdivision (d)(2) requires that operators of hotels and motels provide guests with the option of choosing not to have towels and linens laundered daily.

Reducing water use in the Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek watersheds is necessary to promote water conservation, avoid the waste and unreasonable use of water, and address the drought emergency, because mandatory restrictions have proven to be effective at reducing water use and because extensive efforts to obtain voluntary reductions have not proven effective, so far. The provisions and requirements listed above apply during the summer months to all parties in the upper portions of the Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek watersheds who receive water from surface water or groundwater diversions within those areas. The provisions and requirements listed above may be extended to apply during the late-fall through spring to all parties located with any of the four priority watersheds who receive water from surface water or groundwater in the upper and lower watersheds. The Deputy Director would make the determination whether to extend the water conservation requirements based on consultation with NMFS or CDFW regarding migration passage needs of listed fish species.

The provisions and requirements of section 876, subdivision (d) do not apply to parties located in the Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek watersheds who rely entirely on imported water from diversions outside of the four tributary watersheds. The provisions and requirements of section 876, subdivision (d) include self-supplied parties not served by an urban water supplier, and parties with access to multiple sources of water (e.g., urban water supplier, self-supplied surface water diversion, self-supplied groundwater diversion). All provisions and requirements listed above apply to all sources of water, both potable and non-potable, with the exception of gray water. In this way, the proposed emergency regulation compliments and extends the requirements of the May 5, 2015 Drought Emergency Conservation Emergency Regulation that applies statewide.

Each of the specific prohibitions on water uses and other water use requirements outlined in section 876, subdivision (d) are necessary to promote water conservation to help instream flows needed to support juvenile coho salmon and juvenile steelhead viability in priority Russian River tributaries during the drought emergency, which cannot be done if water is being used in a wasteful or unreasonable manner. These requirements affect practices that use excessive amounts of water or where more efficient and less wasteful alternatives are available, and target ornamental uses of water within limits designed to protect water use that supports the diverters' livelihoods. These practices are particularly unreasonable during a drought due to the need to

conserve limited water supplies to meet immediate health and safety needs and the competing needs of state- and federally-listed species in danger of extinction.

It is both reasonable and prudent to limit discretionary uses of water to protect vital populations of threatened and endangered salmonids in key watersheds during the drought emergency. California has been subject to multi-year droughts in the past and there is minimal likelihood that precipitation this summer and early fall will lift the state out of current drought conditions, given the typical precipitation patterns in the state. Moreover, climate change science indicates that the Southwestern United States is becoming drier, increasing the likelihood of prolonged droughts. Should drought conditions persist into 2016, the savings of water in the groundwater table will prove even more important to maintaining minimum survival conditions for listed salmonids.

The specific prohibitions outlined in section 876, subdivision (d) are primarily targeted at outdoor domestic water uses. There are several reasons that the State Water Board is targeting outdoor water use in this drought emergency regulation. Outdoor irrigation accounts on average for 44 percent of urban water use (DWR 2013), is generally more discretionary than other types of use, and studies have shown that landscapes are often over-watered. In the Russian River watershed, CDFW indicates many parcels adjacent to the creeks are residential and irrigation of outdoor landscaping is a large source of water use in many residential households. In addition, on parcels without access to municipal water sources, water is extracted from within the priority watersheds directly by surface, or groundwater diversion (CDFW, 2015a).

A prohibition on the irrigation of ornamental turf in the four priority watersheds is necessary to promote water conservation, avoid waste and unreasonable use, and address the current drought emergency. For the purposes of this regulation, ornamental turf is defined as all turf other than that used for community recreation by education facilities, recreation-related business, non-profit organizations, or recreational facilities, including but not limited to sports fields and playgrounds, that are generally accessible to the public. Irrigating ornamental turf cannot be considered necessary or reasonable under existing conditions, in light of the needs of water for other uses, including instream uses and commercial and agricultural uses of water. Because reasonable alternatives exist to ornamental turf as a landscape material, and to irrigation of ornamental turf with water taken directly from these watersheds, it is unreasonable to apply water, other than gray water to ornamental turf under the current severe drought conditions in the Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek watersheds.

CCC coho salmon, which are federally- and state-listed as endangered, and CCC steelhead, which are federally-listed as threatened, spend the summer months rearing in Russian River tributaries, including Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek. CCC coho salmon, CCC steelhead, and other native species are negatively impacted by a lack of summer flows. While ornamental turf is replaceable if lost due to lack of irrigation, CCC coho salmon, CCC steelhead, and other populations of native species will be irreplaceable if

extirpated from the Russian River watersheds. Additionally, ornamental turf does not provide the economic benefits of agricultural irrigation, or the societal benefits of community recreation areas.

A prohibition on runoff of outdoor irrigation water in the four tributary watersheds is necessary prevent the waste and unreasonable use of water. Irrigating landscapes to the point of visible runoff is an excessive use of water and more efficient alternatives are available. This practice depletes water supplies, whose maintenance is critical during this drought for survival of CCC coho salmon and CCC steelhead. Runoff can be lost completely from the system without providing for beneficial use.

A two day per week limit on the application of water to irrigate outdoor landscapes besides commercial agriculture in the four priority watersheds is necessary in this severe drought in light of studies showing a trend towards over-watering of urban and ornamental landscapes. Limiting the number of days per week of outdoor irrigation increases conservation and reduces the likelihood of over-irrigation and visible runoff.

This two day per week watering limit for landscapes, including trees, annual plants, perennial plants, and edible plants, extends the limit on frequency of outdoor watering specified under the existing Drought Emergency Water Conservation Emergency Regulation. Under the current Drought Emergency Conservation Emergency Regulation, all parties served by smaller water suppliers and all commercial, industrial, and institutional properties not served by a water supplier are required to limit outdoor irrigation of ornamental landscapes and turf with potable water to no more than two days per week or to reduce usage by 25 percent. The two-day per week limit in the proposed regulation mirrors that required for small public suppliers, but extends the number of people affected by the limit[10]. The current Drought Emergency Water Conservation Emergency Regulation does not include limits on outdoor irrigation of ornamental landscapes and turf with potable water to domestic users not served by a water supplier.

A prohibition on all outdoor irrigation of ornamental turf, except gray water or agricultural commodities meeting the definition of Government Code section 51201, subdivision (a), in the four tributary watersheds between the hours of 8:00AM and 8:00PM is necessary to promote efficient outdoor watering practices and prevent the waste and unreasonable use of water. Outdoor watering is most efficient during the night time and early morning hours, when wind speeds and evapotranspiration rates tend to be lowest. For example, the University of California Center for Landscape & Urban Horticulture (2015) suggests that irrigation is generally most efficient between 2:00 AM and 6:00 AM. This regulation accounts for the inconvenience to residents without automated watering systems of watering during the most efficient early morning hours, and extends the allowable watering time period to include hours in the morning and evening when the majority of people are awake.

[10] The existing conservation regulations allow for small water suppliers to reduce 2013 usage levels by 20 percent as an alternative to the watering restrictions. Such an alternative would be impossible to enforce here, as 2013 usage is unknown.

A prohibition on vehicle washing in the four priority watersheds, except with gray water or at a car wash facility where the water is part of a recirculating system, is a reasonable prohibition on a discretionary use of water. Vehicle washing is a discretionary use of water that does not affect vehicle performance and because there are less wasteful alternatives available. Washing cars with gray water or at commercial car wash establishments where the water is part of a recirculating system are an efficient and reasonable technique for those with a need to wash vehicles. To maintain driver visibility and safety, vehicle operators are encouraged to regularly clean vehicle windshields, windows, and mirrors while this prohibition remains in place. Small buckets of water for cleaning windshields at gas stations promote safety and are available for re-use by many users, producing similar conservation savings to the use of gray water for this purpose.

A prohibition on watering of hardscapes, such as driveways, sidewalks, and asphalt, prevents the waste and unreasonable use of water to address the drought emergency because of more water-efficient cleaning methods of these hardscapes are available. For example, many hardscapes can be cleaned with a broom. The regulation allows for use of water on hardscapes where necessary as part of addressing an immediate health and safety need.

A prohibition on the use of water, except gray water, to fill or refill decorative ponds, fountains, and other decorative water features in the four priority watersheds is a reasonable conservation measure under current severe drought conditions. This prohibition should help individuals notice and fix system leaks and other inefficiencies associated with ponds, fountains, and other decorative water features.

Similarly, a prohibition on the use of water, except gray water, in fountains and other decorative water features in the four priority watersheds, except where the water is part of a recirculating system, prevents the waste and unreasonable use of water during the drought emergency through conserving water that would evaporate or leak and not be reused. Decorative water features do not provide for economic water use, instream use, or health and safety, and therefore do not promote a use of paramount importance during the drought emergency.

A prohibition on outdoor irrigation, except for commercial crops, of all landscapes other than ornamental turf in the four tributary watersheds during and within 48 hours after measurable precipitation events prevents the waste and unreasonable use of water during the drought emergency because irrigation during times when landscape water requirements are met by rain is unnecessary and takes water out of the priority watersheds that is needed for survival of CCC coho salmon and CCC steelhead.

Proposed Section 876, Subdivision (e)

Proposed section 876, subdivision (e) authorizes the State Water Board to collect information on surface water and groundwater diversions in the Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek watersheds. Proposed section 876, subdivision (e) extends the provisions of the drought emergency regulation regarding informational orders (California Code of Regulations., title 23, section 879, subdivision (c)) which authorizes the State Water Board to

issue informational orders to surface water diverters to investigate certain drought-related water right matters. Proposed section 876, subdivision (e) authorizes the State Water Board to issue informational orders to all landowners in the watersheds regarding surface and groundwater diversions and use in the Dutch Bill Creek, Green Valley Creek, portions of Mark West Creek, and Mill Creek watersheds, without first meeting the requirements in section 879 that allow for such orders to specific diverters under certain circumstances that suggest the diversions may not be in compliance with the law. While it is clear that the sum of diversions absent water conservation measures has an unreasonable impact on the fishery, there is a dearth of information on diversions and extractions. This means that it is not possible to identify diverters, their water uses, or information to determine potential impacts of diversions to streamflow. Information collected through the issuance of informational orders will inform the State Water Board's understanding of total water demand and groundwater-surface water connectivity in the four tributary watersheds.

Under the existing drought emergency regulation regarding informational orders (section 879, subdivision (c)), the State Water Board may issue an informational order requiring the water right holder, surface water diverter, or surface water user to provide additional information related to a diversion or use, including: the claim of right, property patent date, date of initial appropriation, diversions made or anticipated during the current drought year, compliance with transfer law if the transfer diversion was not subject to approval of the State Water Board or the DWR, or any other information relevant to authenticating the right or forecasting use and supplies in the current drought year, in certain circumstances.

Groundwater-surface water connectivity is a significant factor in the Russian River watershed due to the region's geology. Although the State Water Board lacks key information on groundwater diversions in the Russian River watershed, it is clear that groundwater pumping constitutes a large portion of total water diversions in the Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek watersheds. In these four tributary watersheds, groundwater withdrawals can have a significant effect on surface water flow, and surface water and groundwater diversions have the potential to significantly affect streamflows in the Russian River basin on a short-term basis (SWRCB, 2011). The State Water Board cannot accurately assess the number of groundwater wells, the location of groundwater wells, the depth of groundwater wells, or the current demand for groundwater in these Russian River watersheds based on existing water right data. This information relates to the type of impact a groundwater diversion may have on the surface stream. Informational orders addressing both groundwater and surface water are necessary to fill in the data gap.

In 2010/2011, the State Water Board and the Center for Ecosystem Management and Restoration installed stream gauges in the four priority tributaries. However, streamflow data from prior years is not available for these tributaries, precluding comparison between current flows and historical, unimpaired flows. With the limited availability of data, the best available information must be used to generate unimpaired flow and depletion estimates.

The State Water Board is collaborating with the University of California- Davis (UC Davis) to develop the Drought Water Rights Allocation Tool (DWRAT) for several major watersheds in California, including the Russian River watershed. This water supply and demand projection tool will help the State Water Board determine when curtailments are needed due to limited water supply, and will aid water users in determining how much water is available to divert under their water right priority, on a real-time basis. While still in development, DWRAT has entered the testing phase for the Russian River watershed. The Russian River DWRAT model estimates water supply on a daily basis for each of the Russian River watershed's 44 HUC-12 sub-watersheds. Two of these 44 HUC-12 sub-watersheds are the priority tributary watersheds of Green Valley Creek and Mill Creek.

To generate water supply information, DWRAT requires estimates of unimpaired surface flows for each HUC-12 sub-watershed. UC Davis generated unimpaired flows for the output of each Russian River HUC-12 sub-watershed based on an existing dataset of modeled unimpaired flows for the Russian River at the City of Healdsburg. The National Weather Service uses data from the USGS "Russian River near Healdsburg, CA" streamflow gauge (station number 11464000), to estimates of unimpaired flows at this location. UC Davis scaled the National Weather Service estimates of unimpaired flows for the Russian River at Healdsburg to each HUC-12 sub-watershed in the Russian River basin using numerical scaling factors. These numerical scaling factors were generated through a Random Forests statistical modeling technique, which considered data from USGS reference streamflow gauges and watershed predictor variables (climate, topography, etc.). The resulting numerical scaling factors are specific to each HUC-12 sub-watershed and vary by month.

Using UC Davis' DWRAT scaling factors, the State Water Board estimated monthly unimpaired flows for the Green Valley Creek and Mill Creek HUC-12 sub-watersheds, based on estimated unimpaired flows recorded at the National Weather Service's Russian River near Healdsburg streamflow gauge data. Dutch Bill Creek and Mark West Creek watersheds were not used because the DWRAT modeling effort defined these watershed areas as larger than those defined in the proposed emergency regulation. The State Water Board has compared the modeled monthly unimpaired flows to the available gauged flows in the Russian River priority tributary watersheds to estimate total water demand in the Russian River priority tributary watersheds. Total water demand includes both surface water and groundwater diversions hydraulically connected to surface water, and includes depletions which are not accounted for in the surface water diversion records.

The HUC-12 unimpaired flows predicted by DWRAT, coupled with the gauged streamflow and reported diversion data, represents the best available water supply and demand information in the Green Valley Creek and Mill Creek watersheds. The year 2011 was selected for water supply and water demand comparisons as it is the most recent year for which the unimpaired flow dataset, streamflow gauge dataset and the reported water demand dataset are available. However, incomplete streamflow records eliminated several summer months from the analysis for both Green Valley and Mill Creeks. The results of the analysis, given the implicit uncertainties in the hydrology model and eWRIMS database, indicate that a significant portion

of the modeled unimpaired flow cannot be accounted for by the gauged streamflow data and diversion data alone. The hypothesis is that the "unaccounted for" depletions (which range from 30%-92% of modeled monthly unimpaired flows) can be attributed to: natural streamflow losses to the groundwater table; groundwater diversions; depletion of surface flows from surface diversions and accelerated losses to the groundwater table from cumulative groundwater depletion; and mis-reported or unreported surface diversions. Given the limited available information, it is impossible to estimate the relative contribution of each of these elements to the overall depletion estimates.

The State Water Board recognizes that the DWRAT hydrology model lacks statistical confidence when estimating streamflows for periods of low flow and when estimating flows in basins where interactions with groundwater may play a significant role in streamflow patterns. However, these estimates provide a reasonably likely picture of the hydrology of the watersheds and the potentially significant impacts of groundwater diversions, when compared to the gauged measurements plus the reported diversion data. Additionally, the unimpaired flow data was estimated at the outlet of the HUC-12 sub-watersheds, whereas the gauges only account for 92% of the watershed area in the Green Valley Creek watershed and 95% of the watershed area in the Mill Creek watershed, therefore the unimpaired flow over estimates. The unimpaired flow data would be higher than the data at the gauge because it is covering a greater area. A high degree of confidence can be placed in the gauged streamflow data and a moderate to high degree of confidence can be placed in the reported diversion data, though some minor inconsistencies exist in the diversion dataset.

To make more informed, timely decisions the State Water Board requires further information to better determine the specific nature of streamflow depletions. This information is essential to evaluate the potential impacts of surface and groundwater diversions on stream flows necessary for threatened and endangered species in the priority tributaries from those diversions. It is also necessary to determine what demand management options might be available.

Proposed section 876, subdivision (e) authorizes the State Water Board to issue informational orders to parties in the priority watersheds to get this needed information. It is anticipated that the State Water Board will simultaneously collect information on surface water and groundwater diversions through the issuance of an informational order. The regulation authorizes issuance of orders to all landowners in the four tributary watersheds, through an online informational order response form. The online form would include questions regarding groundwater and surface water diversions and use. Landowners who do not divert water from a well or a surface water diversion would check the box on the form to certify that they do not divert water from a well or surface water diversion. Landowners who receive water from a public water system may be asked to report on which public water system currently provides their water.

If an informational order is issued under proposed section 876, subdivision (e), surface water diverters will be required to submit information on surface water diversions, including, but not limited to: primary owner contact information, type and basis of claim, uses of water, location of

surface water diversion, location of surface water use, and amount of surface water diverted. This could include information on: permit/license or statement number; types of beneficial uses (e.g., domestic, irrigation, etc.); estimated monthly diversions in 2014; projected monthly diversions through 2015; estimated maximum rate of diversion; and volume of storage tank or reservoir. Landowners with riparian claims may also be required to provide their patent date. Landowners with pre-1914 appropriative claims and riparian claims would also be required to provide the claimed priority date; year of first use; and parcel numbers for property served.

If an informational order is issued under proposed section 876, subdivision (e), landowners would be required to submit information on groundwater diversions including: primary owner contact information; type and basis of claim; uses of water; locations of groundwater diversion; locations of groundwater use; and amount of groundwater diverted; well completion report number; date of well completion; date of first use; reference point elevation (if known); sanitary seal depth; screened interval; types of beneficial uses (e.g., domestic, irrigation, etc.); estimate monthly diversions in 2014; projected monthly diversions through 2015; maximum rate of diversion (e.g., pump capacity); and volume of storage tank or reservoir.

The State Water Board may also require landowners to provide additional information relevant to forecasting use and impacts to the surface streams under current drought conditions. For example, landowners may be asked whether they currently receive water from a public water system or source other than a surface water or groundwater diversion, or whether they receive contract water. Surface water diverters may be asked additional questions related to surface water use, such as whether they currently coordinate stream diversions with other landowners. Groundwater diverters may be asked to provide additional information regarding groundwater use and local geology. For example, groundwater diverters may be required to provide information on underlying geology, as specified in the well completion report.

Groundwater informational orders, coupled with surface water informational orders, will provide the State Water Board with the information it needs to estimate total water demand in the Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek watersheds. After informational orders have been submitted to the State Water Board, supply and demand data may be compared to determine when, and to what priority level, curtailments should occur in the four Russian River tributary watersheds, if necessary. The State Water Board may use the information submitted under the information order to evaluate water demand, ensure water availability for senior water rights holders, health and safety needs and minimum flow are maintained for the summer rearing and late-fall migration periods.

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Authority and Reference Citations

For Section 876
Authority: Sections 1058, 1058.5, Water Code
Reference: Cal. Const., Art., X § 2; Sections 100, 102, 104, 105, 109, 174, 275, 1011, 1051, 1052, 1058.5, Water Code; *Light v. State Water Resources Control Board* (2014) 226 Cal.App.4th 1463

Mandate on Local Agencies or School Districts

The State Water Board has determined that proposed Article 24 does not impose a new mandate on local agencies or school districts. The regulation is generally applicable law.

Suspension of California Environmental Quality Act

On April 24, 2014, Governor Edmund G. Brown Jr. issued a second Executive Order addressing the drought emergency, which, inter alia, suspended the California Environmental Quality Act (CEQA) as applied to the State Water Board's adoption of emergency regulations to "prevent the waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of water, to promote water recycling or water conservation, and to require curtailment of diversions when water is not available under the diverter's priority of right."

Cost Estimate

The three fiscal effects of the proposed emergency regulation relevant to Government Code section 11346.5, subdivision (a)(6) are the costs that would be incurred by state and local government agencies: (1) to replace ornamental turf; (2) to complete and submit online the information required by an informational order issued pursuant to section 876, and supporting documentation; and (3) for the Department of Water Resources (DWR) to respond to requests for well completion information by well owners in the Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek, watersheds. The State Water Board estimates the total cost to all state and local (including city, county, schools and publicly owned water suppliers) government agencies due to the proposed emergency regulation as approximately $4,846,495. The total cost for all local (including city, county, schools, and publically owned water suppliers) and state agencies for ornamental turf replacement is $4,118,040 ($166,400 for the State of California, $374,040 for local schools and school districts, and $3,577,600 for other local government entities). The total cost for all local (including city, county, schools, and publically owned water suppliers) and state agencies to fill out informational orders is $336,505 ($14,105 for the State of California, $21,158 for local schools and school districts, and $301,242 for other local government entities). The total estimated cost to the DWR as a consequence of the proposed regulation is $391,950 for staff time needed to fulfill well completion report requests.

The State Water Board is the only agency that can implement this emergency regulation. As required by Government Code Section 11346.5, subdivision (a)(3)(D), the State Water Board has conducted an evaluation of this regulation and has determined that it is not inconsistent or incompatible with existing state regulations.

Attachment 1: Fiscal Impact Statement

Summary

The three fiscal effects of the proposed emergency regulation relevant to Government Code section 11346.5, subdivision (a)(6) are the costs that would be incurred by state and local government agencies: (1) to replace ornamental turf; (2) to complete and submit online the information required by an informational order issued pursuant to section 876, and supporting documentation; and (3) for the Department of Water Resources (DWR) to respond to requests for well completion information by well owners in the Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek, watersheds. The State Water Board estimates the total cost to all state and local (including city, county, schools and publicly owned water suppliers) government agencies due to the proposed emergency regulation as approximately $4,846,495. The total cost for all local (including city, county, schools, and publically owned water suppliers) and state agencies for ornamental turf replacement is $4,118,040 ($166,400 for the State of California, $374,040 for local schools and school districts, and $3,577,600 for other local government entities). The total cost for all local (including city, county, schools, and publically owned water suppliers) and state agencies to fill out informational orders is $336,505 ($14,105 for the State of California, $21,158 for local schools and school districts, and $301,242 for other local government entities). The total estimated cost to the DWR as a consequence of the proposed regulation is $391,950 for staff time needed to fulfill well completion report requests. The proposed emergency regulation is not anticipated to result in costs or savings in federal funding to the State.

Fiscal Impact of Proposed Section 876 Subdivision (d)

The State Water Resources Control Board (State Water Board) expects there will be fiscal impacts on state and local agencies due to the conservation measures in proposed Section 876, subdivision (d). There are two potential costs to state and local agencies: (1) revenue losses for public water supply agencies; and (2) potential ornamental turf replacement. The State Water Board Division of Drinking Water identified seven public water suppliers that divert water from within the Dutch Bill Creek, Green Valley Creek, Mark West Creek, and Mill Creek, watersheds. Four districts including the Sweetwater Springs County Water District, Occidental Community Service District, Forestville County Water District and the Russian River County Water District receive water from outside the watershed and are not subject to section 876, subdivision (d) and therefore will not incur any fiscal losses due to conservation. The other public water suppliers are schools or school districts with wells in the watersheds. These schools do not generate revenue from water and therefore will not incur any fiscal losses due to conservation. The proposed prohibition on ornamental turf watering could result in the need to replace ornamental turf at some locations. It is estimated that each state or local agency or school will need to replace one-quarter (¼) acre (10,890 square feet) of ornamental turf for every four parcels it owns. Turf replacement with sod was estimated at $3.82 per square foot, including labor from a licensed contractor and materials (personal communication Larry Rolfes, June 12, 2015). While the Board does not encourage replacing ornamental turf with sod, the

average cost to replace lost ornamental turf with new sod is estimated to be $41,600 per quarter acre. Using this value, the cost to the State of California to replace ornamental turf is estimated to be $166,400 (approximately four state-owned parcels estimated to need replacement multiplied by $41,600). The cost to local schools and school districts for replacement of ornamental turf is estimated to be $374,040 (approximately nine parcels estimated to need replacement multiplied by $41,600). The cost to other local government entities, including but not limited to city and county, for replacement of ornamental turf is estimated to be $3,577,600 (approximately 86 parcels estimated to need replacement multiplied by $41,600). Therefore, the total estimated cost to all local (including city, county, schools and publicly owned water suppliers) and state agencies for ornamental turf replacement is $4,118,400 (estimate a total 99 parcels would need ornamental turf replacement multiplied by $41,600). It is assumed that this amount predicts cost on the upper end, and that State and local government entities will indeed look to long term turf replacement with cheaper, less cost-intensive alternatives.

Fiscal Impact of Proposed Section 876 Subdivision (e)

Proposed section 876, subdivision (e) imposes three potential obligations, or costs, to state and local agencies. The potential fiscal impacts of the information orders issued pursuant to proposed section 876, subdivision (e) include the costs to local government agencies to complete and submit an online informational form and supporting documentation. In addition, DWR will incur costs to fulfill requests for well information from the well owners.

To conservatively estimate the cost of the proposed regulation, the State Water Board determined the total number of state and local government agencies in the four priority tributaries and multiplied that number by an average time to complete the online information order response form and submit any supporting documentation, multiplied by an average staff cost per hour.

The State Water Board has identified 31 state and local agencies, which will receive informational orders. These state and local agencies own 334 parcels, identified via ParcelQuest, and will be required to fill out an informational form for each parcel identified by unique assessor's parcel number. The State of California owns 14 parcels and local schools and school districts own 21 parcels. The remaining parcels are owned by local agencies. The amount of time required to complete the online informational order response form and submit supporting documentation will depend on whether each entity already has documentation regarding its diversion and use, or whether the entity will need to obtain such information. Only minimal additional time is expected to be needed to provide 2014 diversion records and project 2015 water use. Surface water diverters should have already filed a Statement of Water Diversion and Use with the State Water board. Groundwater diverters will likely know diversion amounts through pumping rates and utility costs and will require minimal additional time to prepare. Thus, recordation of water use is not anticipated to have a fiscal impact. For most diverters, 2015 projected use is expected to be similar to 2014 diversion use data, as the years are similarly dry and will require minimal additional time to prepare.

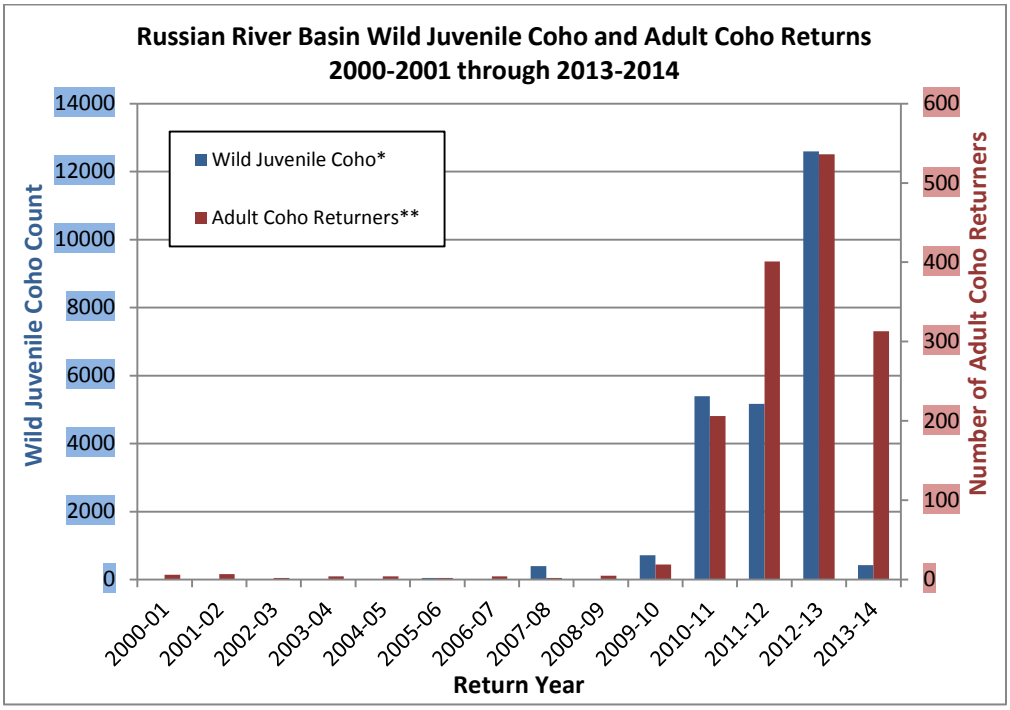
Completion of the online form is expected to take less than one hour, but one hour was used in cost estimates in order to avoid underestimating costs. The bulk of entities' time will be spent gathering information and compiling documentation for submittal. To provide direction and assistance in finding patent records, the State Water Board will provide a link to the U.S. Bureau of Land Management's patent database. To provide direction and assistance in finding groundwater well records, the State Water Board will include a link to the DWR groundwater well completion report request form on the informational order website. The time required to find and collect the requested documentation will vary depending on the expertise in records research, whether the task is contracted out to a firm with experience locating such records, etc. It is estimated to take five to 24 hours to gather the information required by the informational order, contingent on whether the agency has partial records or records readily available.

It is estimated that the total time to complete the information order will be six to 25 hours (five to 24 hours to collect the requested documentation plus one hour to fill out form). Inasmuch as agencies are required to exercise due diligence prior to using public funds to purchase property, it is estimated that at least half of the agencies will have partial or complete records. The remaining agencies will likely have incomplete records. Thus, the average time is expected to be 15.5 hours to gather and submit the information for the informational order. The State Water Board has used a conservative estimate of $65 per hour for staff time and overhead costs. The State of California owns 14 parcels within the four priority watersheds and will therefore incur an estimated cost of $14,105 (14 state owned parcels multiplied by $65 per hour, multiplied by 15.5 hours). Local schools and school districts own 21 parcels within the four priority watersheds and will incur an estimated cost of $21,158 (21 state owned parcels multiplied by $65 per hour, multiplied by 15.5 hours). Other local government entities, including but not limited to city and county agencies, own 299 parcels within the four priority watersheds and will incur an estimate cost of $301,242 (299 local agency owned parcels multiplied by $65, multiplied by 15.5 hours). Therefore, the total cost estimated to all local (including city, county, schools and publicly owned water suppliers) and state agencies to complete the informational order response form and submit the supporting documents is $336,505 (334 local and state agency owned parcels multiplied by $65 per hour, multiplied by 15.5 hours).

The Groundwater Ambient Monitoring and Assessment (GAMA) Program database allows searches for groundwater well records by Public Land Survey System section. Based on sections which lie partially or completely within the four priority watersheds it is estimated that there are 10,048 wells that may be affected by the proposed emergency regulation. It is estimated that 10-50 percent of the wells identified actively pump groundwater within the watersheds and will be affected by the proposed emergency regulation. The other 90-50 percent are likely monitoring wells, abandoned wells or outside the watershed. In addition, it is expected approximately 40 percent of well owners will readily have the well completion information and will not request further information from DWR. Thus it is a conservative estimate that DWR will receive 3,015 well completion record requests (50 percent of total identified wells that will be affected is estimated to be 5,024 wells; 60 percent of affected wells are estimated to request well completion information from DWR for an estimated total of 3,015 wells). DWR estimates the average staff time to respond to each request for well completion information to be two hours (Schaffer, 2015). Using a conservative estimate of $65 per hour for

staff time and overhead costs, the total estimated impact to DWR as a consequence of the proposed regulation is $391,950 (3,015 well completion record requests multiplied by $65 per hour, multiplied by two hours per request).

Attachment 2: Russian River Basin Wild Coho Counts



Russian River wild juvenile coho (blue) and adult coho returners (red). Data provided by the Russian River Coho Salmon Captive Broodstock Program.

*Wild juvenile coho counts were conducted by snorkeling and should be considered minimum population sizes.

**Adult coho returners are minimum counts for return winters 2000/2001 through 2009/2010. Adult coho salmon returner counts were made via passive integrated transponder (PIT)-tag detections, spawner surveys, adult trapping, and video monitoring. If there was a possibility for counting a single fish twice using different methods, duplication was always assumed and the smaller number was reported (UCCE/CA Sea Grant, 2015). Adult coho returner values for 2011/2012 through 2013/2014 are total estimated population sizes based on PIT-tag detections. Adult coho returners for 2014/2015 are not shown above as the migration season is ongoing, but the estimated number of adult returners as of December 31, 2014 was 187 adult coho salmon.

Attachment #3: May 28, 2015 California Department of Fish and Wildlife Letter to the State Water Board

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND GAME
Office of the Director
1416 Ninth Street, 12th Floor
Sacramento, CA 95814
www.dfg.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

May 28, 2015

Tom Howard
Executive Director
California State Water Resources
Control Board
1001 I Street
Sacramento, CA 95814

Dear Mr. Howard:

Subject: Recommendations for Conservation Actions to Support Listed Salmonids During the 2015 California Drought for Select Tributaries to the Russian River

The California Department of Fish and Wildlife (CDFW) has been working collaboratively with the National Marine Fisheries Service (NMFS), local landowners, and the State Water Resources Control Board (State Water Board) to address ongoing conditions resulting from the drought. Low flow conditions in tributaries of the Russian River have resulted in significant declines in salmonid production and survival during the 2014 season and drought conditions have persisted in 2015. These watersheds contain Central California Coast (CCC) coho salmon and CCC steelhead, which are listed under the Federal Endangered Species Act (ESA) as endangered and threatened, respectively. Coho salmon are also listed as Endangered under the California Endangered Species Act (CESA). CDFW has determined the following:

- These tributaries have historically supported spring and summer rearing habitat for naturally producing coho salmon and steelhead and support some of the last remaining habitat available during drought.
- These tributaries sustained perennial flow in the previous three drought years and available habitat is limited by lack of flow.
- These tributaries are subject to large numbers of summer diversions that are cumulatively affecting the amount of water available for instream habitat.
- The exact number, location, and extent of diversions are unknown. Better information can help parties manage diversions cumulatively as it relates to instream habitat.
- When parcels do not have access to municipal water sources, water is extracted from the watershed whether by surface or subsurface diversion.
- Surface and subsurface diversion of streamflow is not subject to any mandatory conservation measures.
- Many of the parcels adjacent to the creeks are residential and irrigation of outdoor landscaping is a large source of water use in many residential households.

Voluntary Drought Initiative

On January 17, 2014, Governor Edmund G. Brown Jr. declared a drought state of emergency. On April 25, 2014, the Governor issued an Executive Order continuing the State of Emergency and strengthening the state's ability to manage water and habitat effectively in drought conditions. On December 22, 2014, Governor Brown issued an Executive Order that extended certain aspects identified in the January 2014 and April 2014 Executive Orders until May 31, 2016.

Importantly, the April 2014 Executive Order directed CDFW to work with other state and federal agencies and with landowners in priority watersheds to protect threatened and endangered species and species of special concern and maximize the beneficial uses of scarce water supplies, including employment of voluntary agreements to secure instream flows, relocation of members of those species, or through other measures. In 2014, CDFW worked in various river systems around the state to pursue voluntary agreements with landowners.

CDFW partnered with the NMFS to develop a California Voluntary Drought Initiative (Voluntary Drought Initiative) program, which identified Green Valley, Mill, Dutch Bill and Mark West Creeks as priority watersheds. These creeks are tributaries to the mainstem Russian River. CDFW encourages the development of Voluntary Drought Initiative Agreements (Agreements) between CDFW and other parties to provide instream flows for fish, associated monitoring, and potential fish rescue actions. In October 2014, April 2015, and May 2015, CDFW provided letters to all landowners within select areas of these four streams to encourage water conservation and the development of Agreements to enhance flows to support summer rearing habitat critical to the survival of coho salmon and steelhead. As of now, CDFW believes that conditions in these priority watersheds are quickly deteriorating and without significant water conservation efforts most if not all portions of these tributaries could experience fish mortality due to early drying. Coho require hydrologic connection between pool habitat to maintain adequate disolved oxygen and temperature conditions for survival.

In addition to those cooperative efforts, we encouraged residents to take additional water conservation actions and provided information on potential voluntary actions that could be taken to protect threatened and endangered species and maximize the beneficial uses of scarce water supplies. In order to communicate the dire conditions in these watersheds and to encourage landowner cooperation, CDFW has conducted several outreach meetings to facilitate the Voluntary Drought Initiative process. Through our communications with landowners, we have received several complaints regarding other landowners who have not been responsive to CDFW efforts and are likely having a considerable effect on instream flow. CDFW will continue to work collaboratively with landowners to implement voluntary activities; however, additional

action may be needed to ensure sufficient flow for summer rearing and adult passage in the fall and early winter during the 2015 drought.

In 2015, as of the date of this memorandum, CDFW has entered into Agreements with nineteen residential landowners to forgo irrigation of lawns, implement additional water conservation measures and provide creek access to CDFW to monitor fishery and stream conditions and to implement potential fish rescue actions. CDFW is also in discussions with several landowners including representatives from the wine industry, to develop Agreements to release stored water to enhance instream flow for coho salmon. Several landowners including Jackson Family Winery have also donated funds to local groups to help residential landowners purchase tanks under the Emergency Tank Program to help minimize the effect of water diversions on instream habitat.

In broad terms, CDFW's goal in the Russian River is an ambitious one. The Russian River hydrologic unit covers an area approximately 1,485 square miles and includes about 240 named and numerous unnamed tributaries. It is the subject of a fisheries restoration plan articulated in CDFW's Recovery Strategy for Coho.

Coast-wide coho salmon recovery in California depends on recovery success in the Russian watershed. We know that a coalition of collaborative partners exists in the watershed and that this coalition is willing to work together to make it through this drought. We are charged to bring back coho salmon to healthy and sustainable population levels. In the immediate, we hope to bridge hydrological conditions in this fourth year of drought (and any future years) such that it might be possible to maintain minimal hydraulic connectivity in these four tributary streams to support habitat conditions that provide a reasonable probability of survival of steelhead and coho salmon juveniles during the summer low flow period. Both in the broad, long-term goal – and the immediate – CDFW believes working with all parties provides the best chance for success.

Emergency Regulations

CDFW has coordinated with State Water Board staff regarding potential emergency regulatory measures under consideration for regulation by State Water Board. Based on that coordination and the significant public outreach in the last few weeks, CDFW is not now recommending the State Water Board move forward with requiring regulations for curtailment of diversions, although that need may arise as the summer progresses. Instead, for now, CDFW and NMFS recommend that the State Water Board develop emergency regulations, pursuant to Water Code section 1058.5, for areas within Green Valley, Mill, Dutch Bill and Mark West Creek watersheds (https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=98347&inline), tributaries to the Russian River to: (1) issue an informational order to determine the extent of current surface and subsurface diversion operations in each watershed; and, (2) immediately

implement conservation measures to limit the amount of water extracted from these watersheds during the 2015 drought that track conservation measures the State Water Board has required elsewhere. These regulations include measures to:

- Forgo irrigation of all lawn and ornamental annual areas;
- Forgo all irrigation between 8 am and 8 pm and within 48 hours of rain event;
- Forgo washing cars, sidewalks and driveways; and,
  Forgo expansion of all other water uses beyond 2014 levels.

CDFW acknowledges State Water Board staff and many parties around the state are busy faithfully and collaboratively implementing the Sustainable Groundwater Management Act. The recommendation for an information order is in no way intended to interfere with local leadership on implementation. CDFW will continue to work with landowners to pursue Agreements under the Voluntary Drought Initiative. We thank the nineteen enrollees so far. We await any other parties who might like to design their Agreement for participation in the Voluntary Drought Initiative. CDFW recommends that landowners operating in conformance with the terms of an executed agreement that includes conservation commitments be exempt from new conservation regulations that may be implemented by State Water Board for these tributaries.

If you have questions regarding these recommendations, please contact Ms. Corinne Gray, Senior Environmental Scientist (Specialist), at (707) 944-5526; or Mr. Craig Weightman, Environmental Program Manager, at (707) 944-5577 or Mr. Scott Wilson, Regional Manager, at (707) 944-5517; or by writing to CDFW at Bay Delta Region, 7329 Silverado Trail, Napa, CA 94558.

Sincerely,

Charlton H. Bonham
Director

cc: Mr. Gary Stern
Mr. David Hines
NOAA Fisheries
777 Sonoma Avenue, Room 325
Santa Rosa, CA 95404

ec: Barbara Evoy, Deputy Director
State Water Resources Control Board
Division of Water Rights
Barbara.Evoy@waterboards.ca.gov

California Department of Fish and Wildlife

Sandra Morey, Deputy Director
Ecosystem Conservation Division
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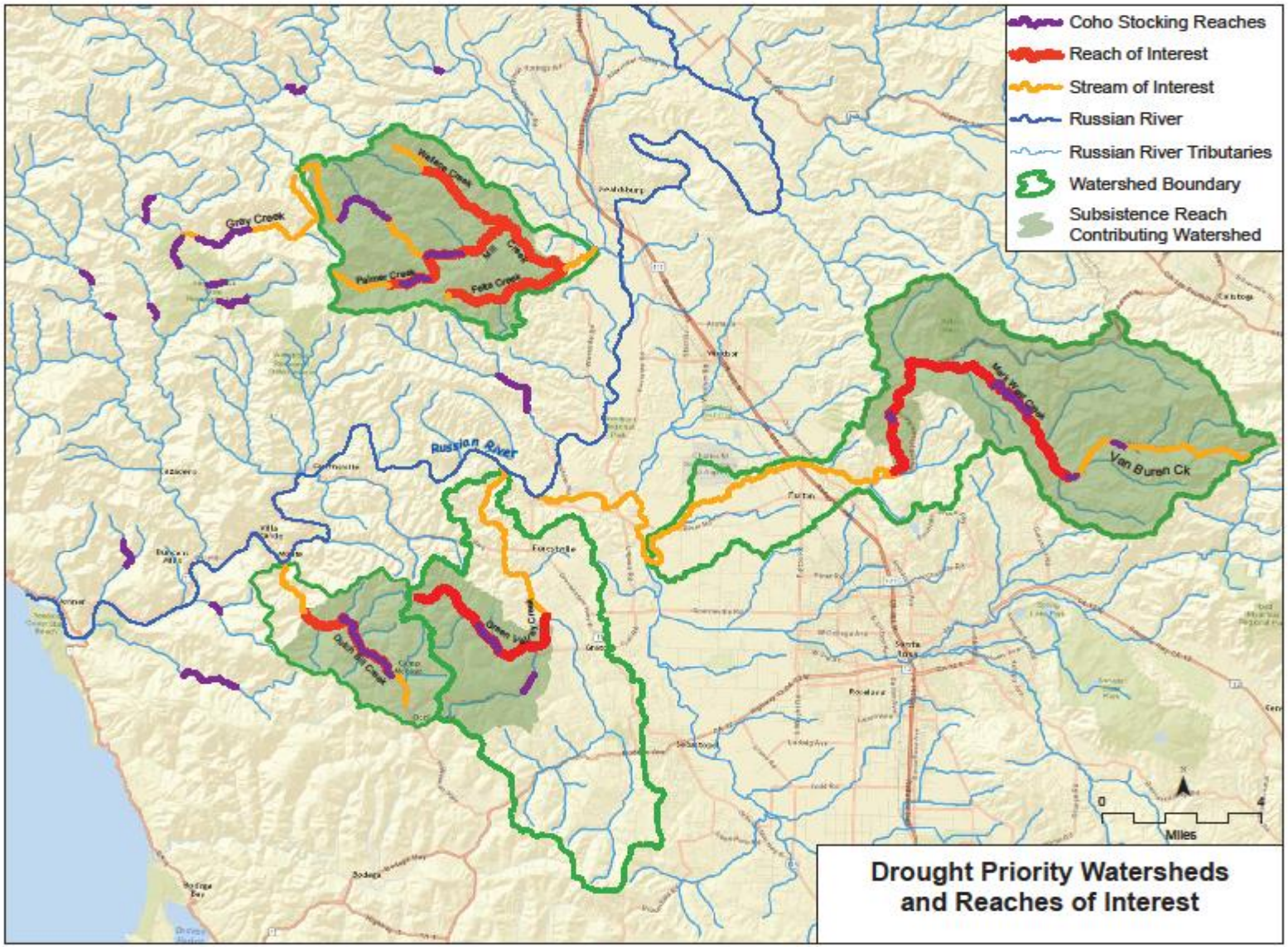
Scott Wilson, Manager
Bay Delta Region (Region 3)
Scott.wilson@wildlife.ca.gov

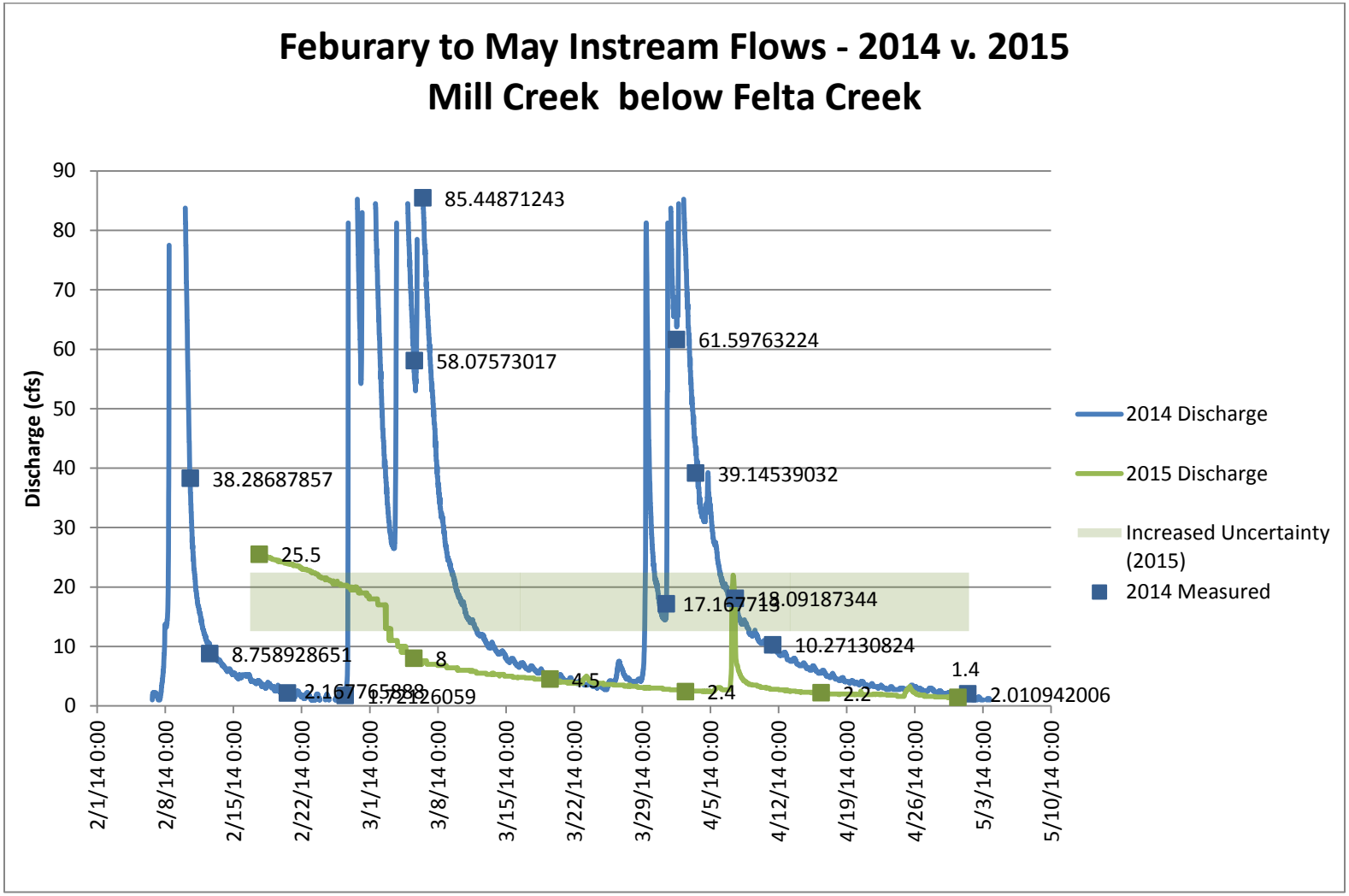
Craig Weightman, Environmental Program Manager
Bay Delta Region (Region 3)
Craig.weightman@wildlife.ca.gov

Corinne Gray, Senior Environmental Scientist
Bay Delta Region (Region 3)
Corinne.gray@wildlife.ca.gov

Attachment 4: California Department of Fish and Wildlife Drought Priority Watersheds and Reaches of Interest

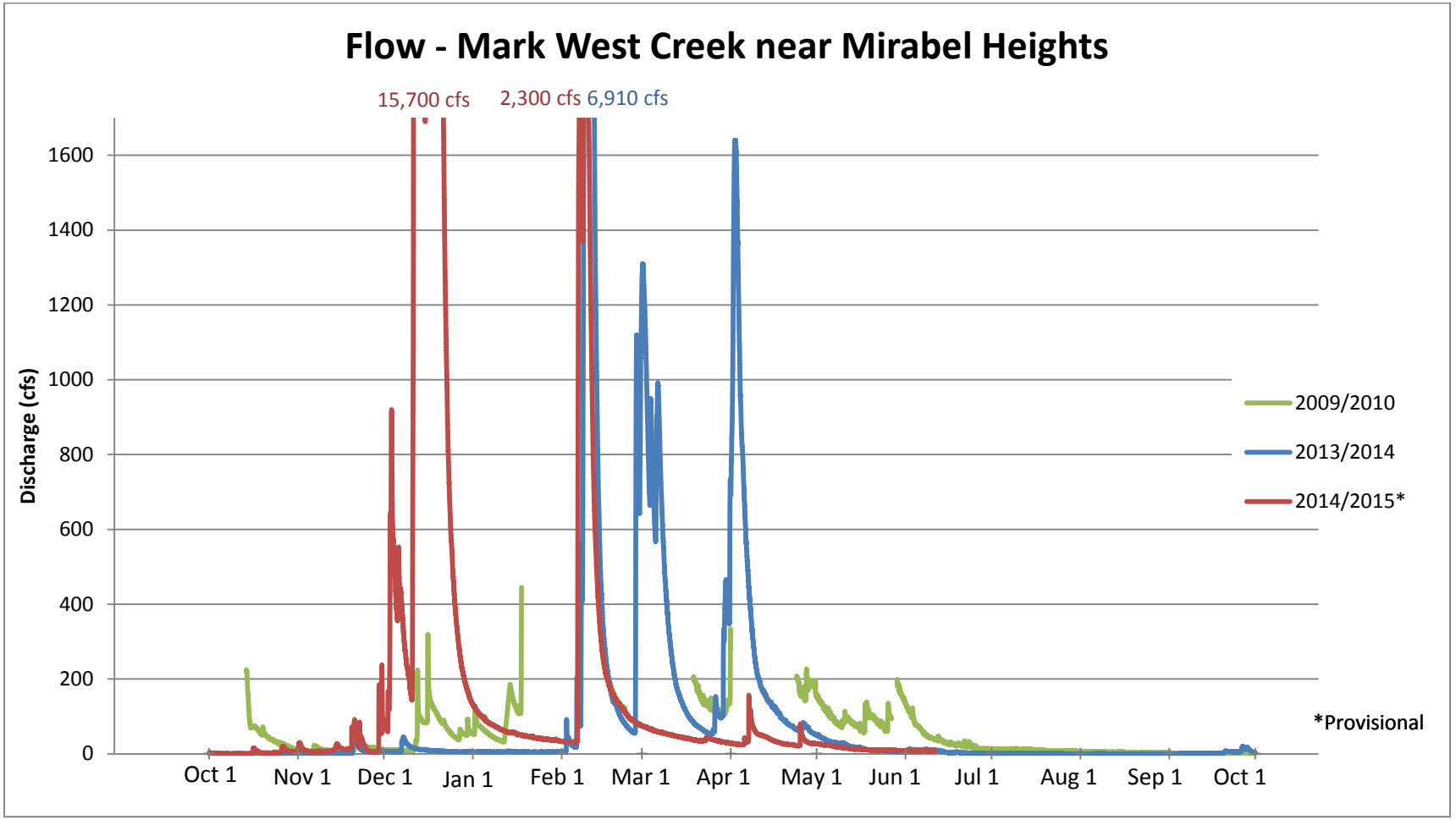


Attachment 5: Mill Creek below Felta Creek February to May Instream Flow



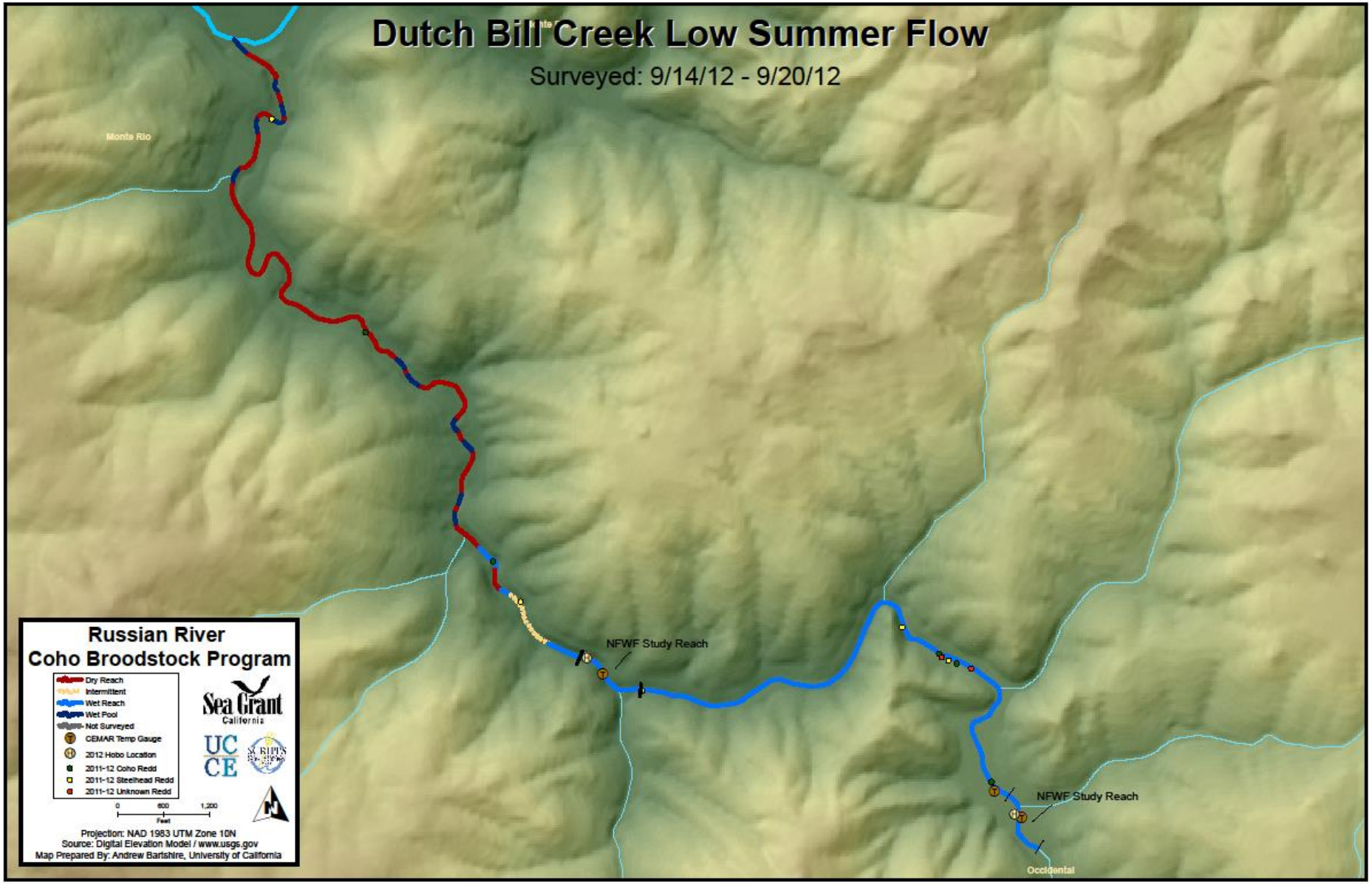
Mill Creek spring flows in cubic feet per second (cfs), comparing 2014 (blue) and 2015 (green), measured by the State Water Board gauging station below the Felta Creek confluence. Boxes indicate manual flow measurements used to calibrate the continuous gauge data. High flow peaks in 2014 are not displayed, because they could not be calibrated with direct measurements due to the prohibitively high flows and brevity of the high flow events. The area displayed in light green shading indicates a range of discharges in 2015 for which there is increased uncertainty due to lack of manual discharge measurements at those flows.

Attachment 6: Mark West Creek near Mirabel Heights 2009-2015 Instream Flows by Water Year

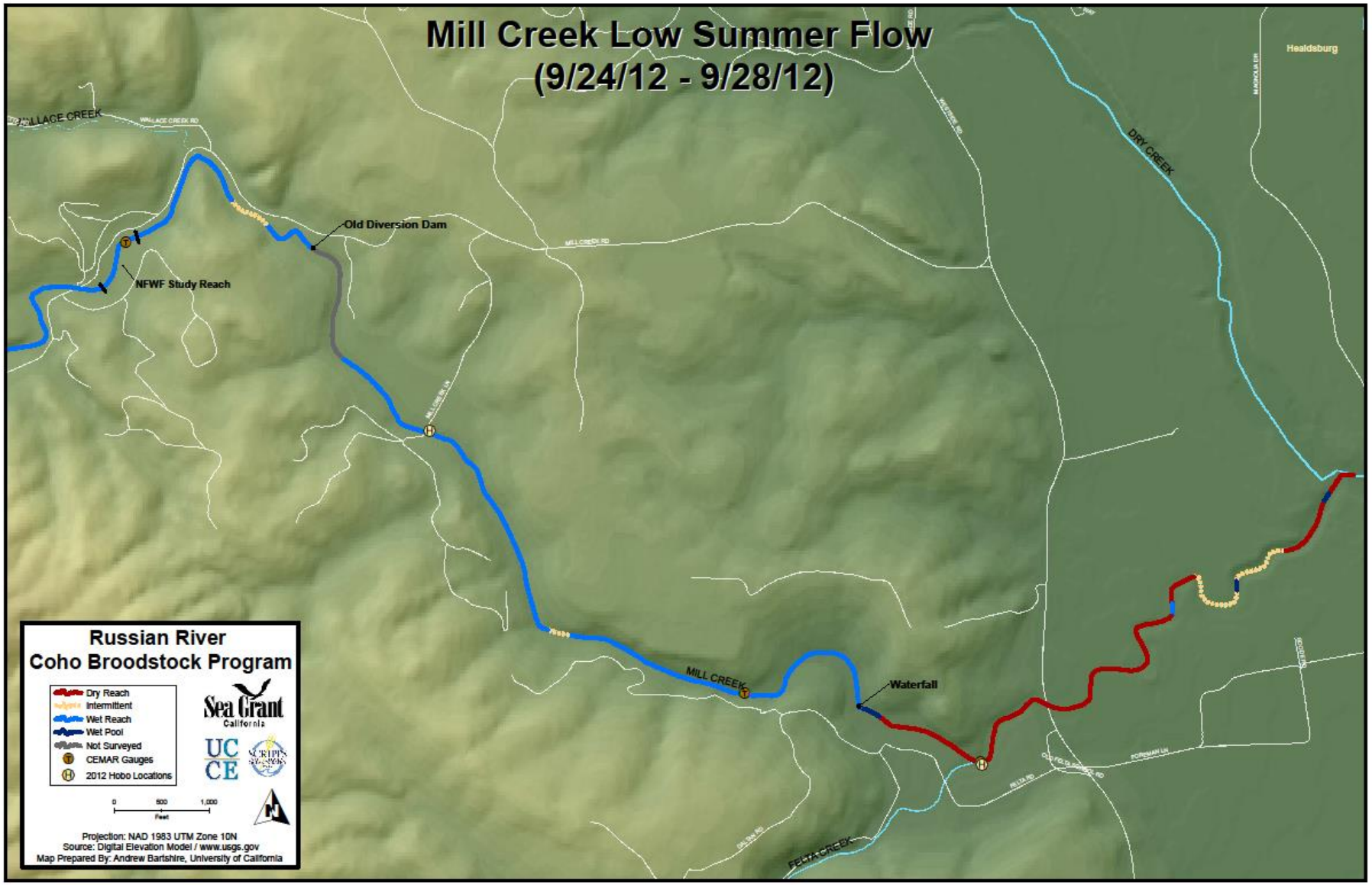


Mark West Creek flows in cubic feet per second (cfs), displayed by water year, comparing 2009/2010 (green), 2013/2014 (blue), and 2014/2015 (to most recent available) (red). Flow was measured by the United States Geological Survey (USGS) gauging station near Mirabel Heights (station number 11466800). Data for 2014/2015, from October 17 of 2014 onward, is provisional. Flood peaks that exceed the y-axis (Discharge- fgs) range are labeled with their peak cfs values. Some data gaps exist for the 2009/2010 water year.

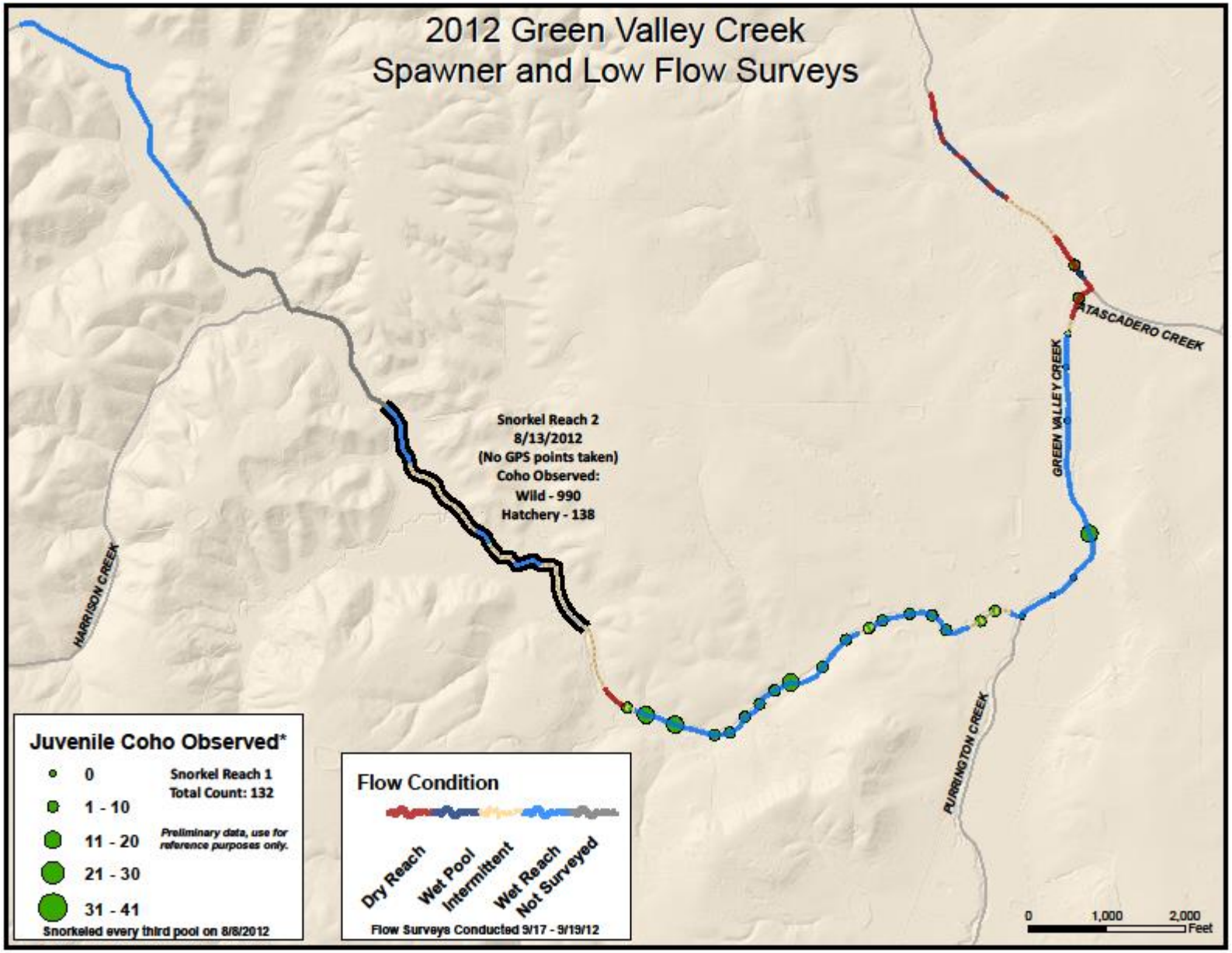
Attachment 7: 2012 Dutch Bill Creek Low Summer Flow Map



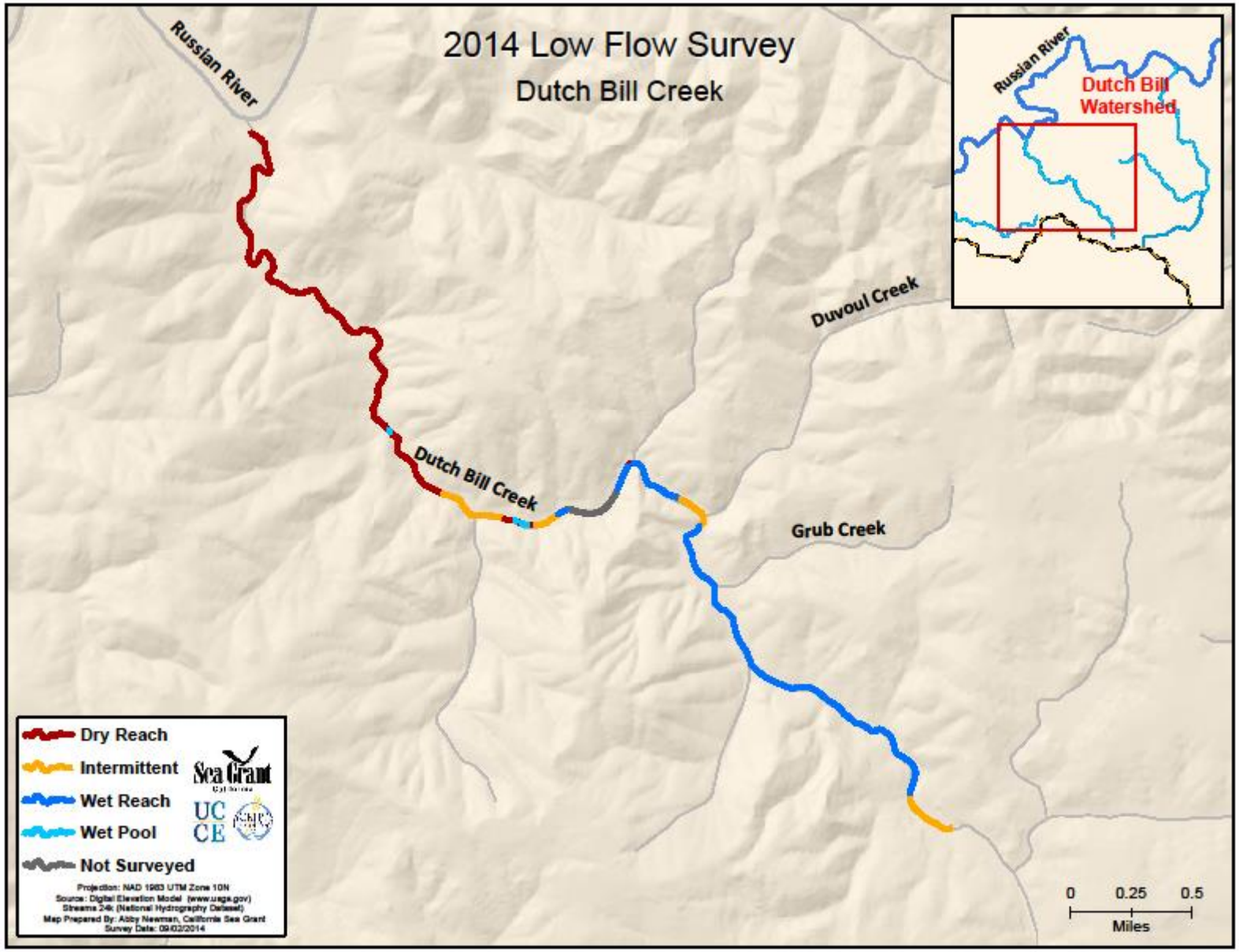
Attachment 8: 2012 Mill Creek Low Summer Flow Map



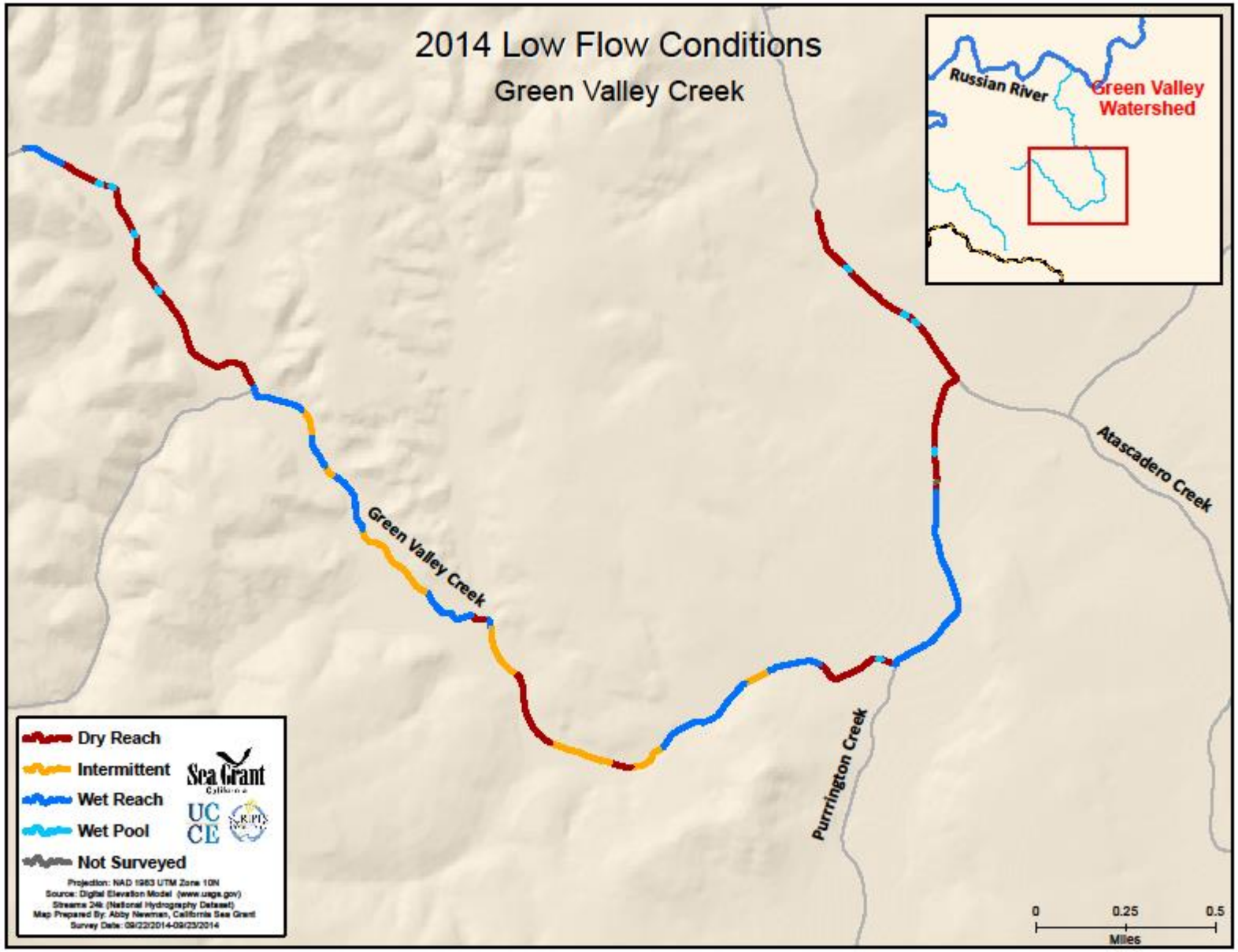
Attachment 9: 2012 Green Valley Creek Spawner and Low Flow Surveys Map



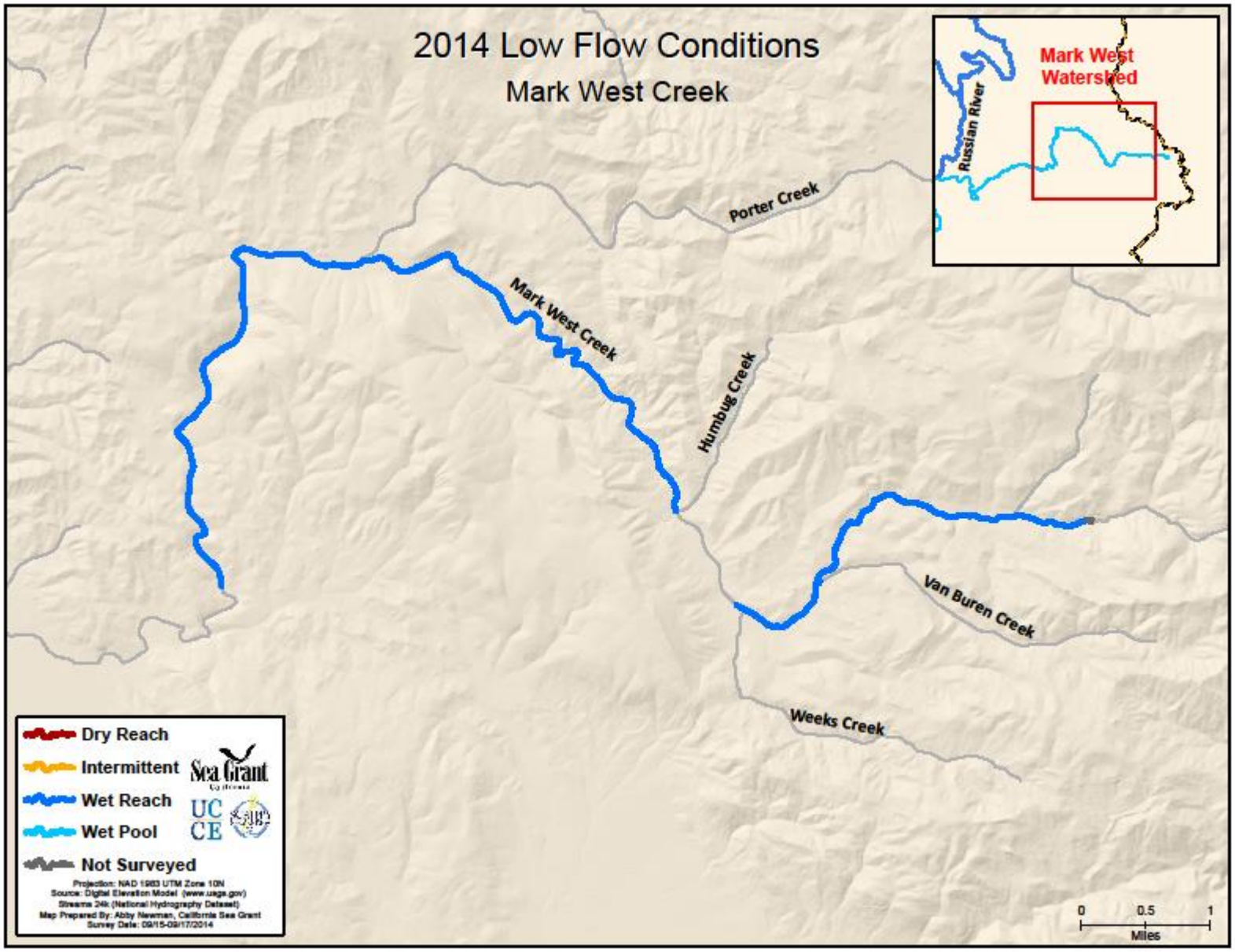
Attachment 10: 2014 Low Flow Survey Dutch Bill Creek Map



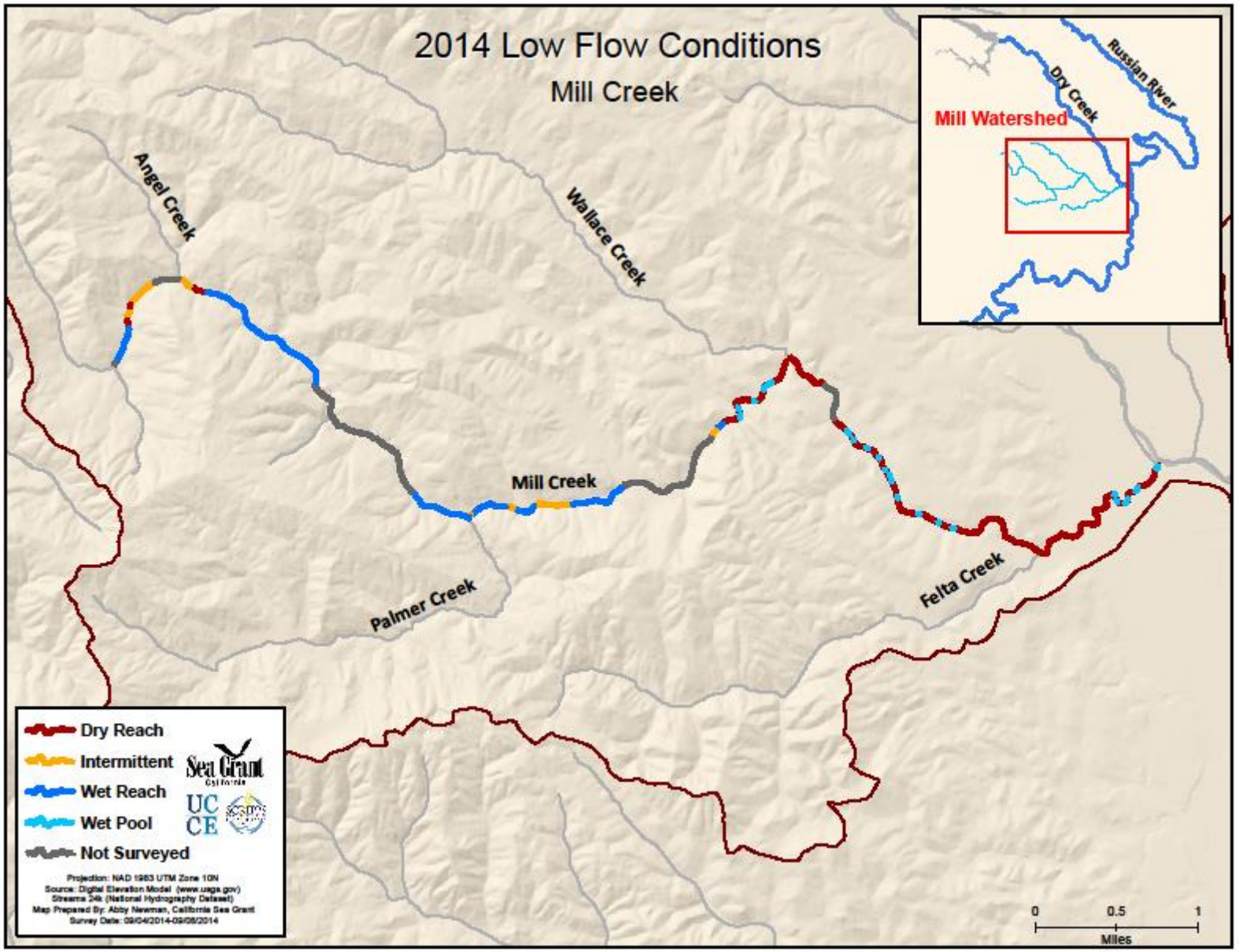
Attachment 11: 2014 Low Flow Conditions Green Valley Creek Map



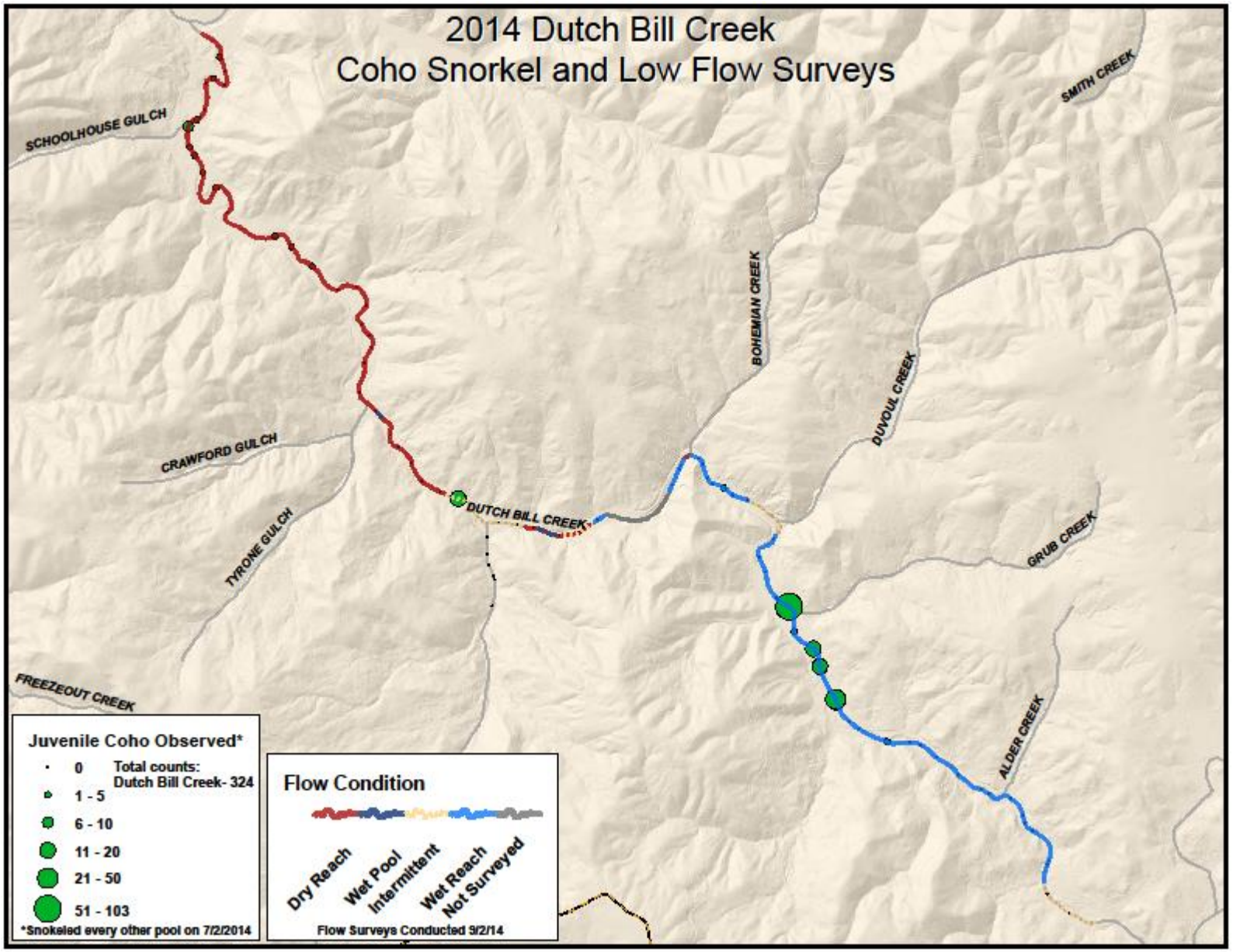
Attachment 12: 2014 Low Flow Conditions Mark West Creek Map



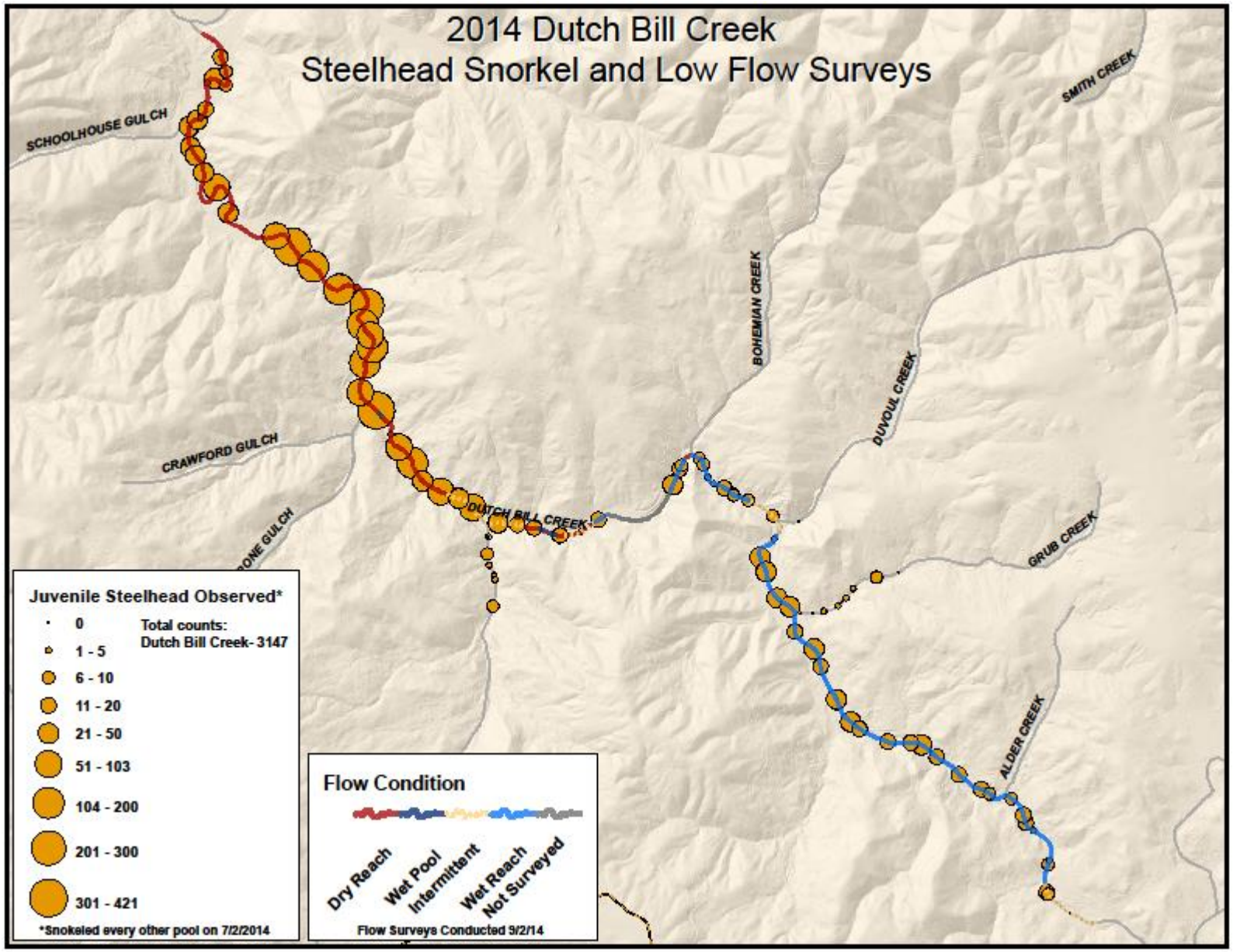
Attachment 13: 2014 Low Flow Conditions Mill Creek Map



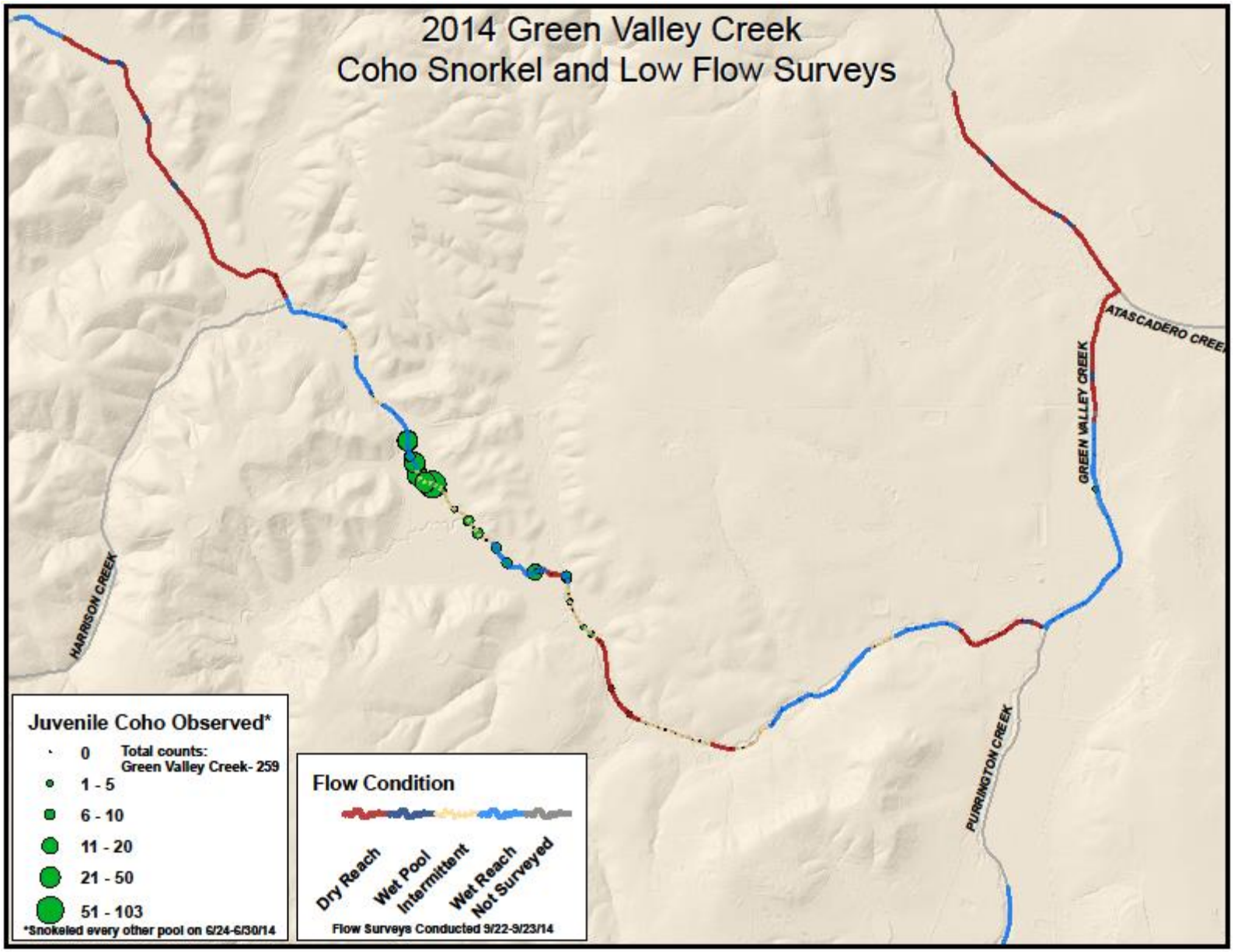
Attachment 14: 2014 Dutch Bill Creek Coho Snorkel and Low Flow Surveys Map



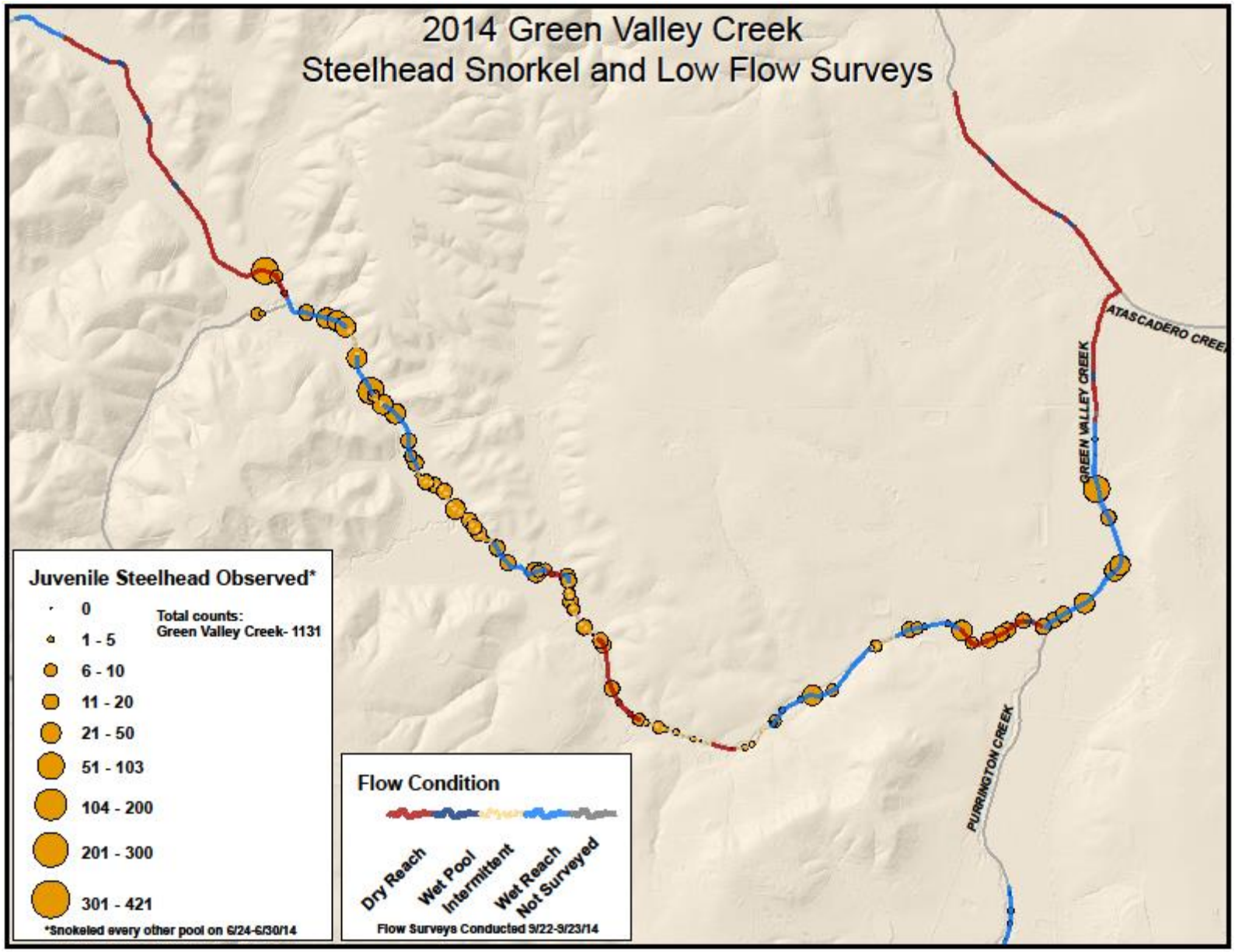
Attachment 15: 2014 Dutch Bill Creek Steelhead Snorkel and Low Flow Surveys Map



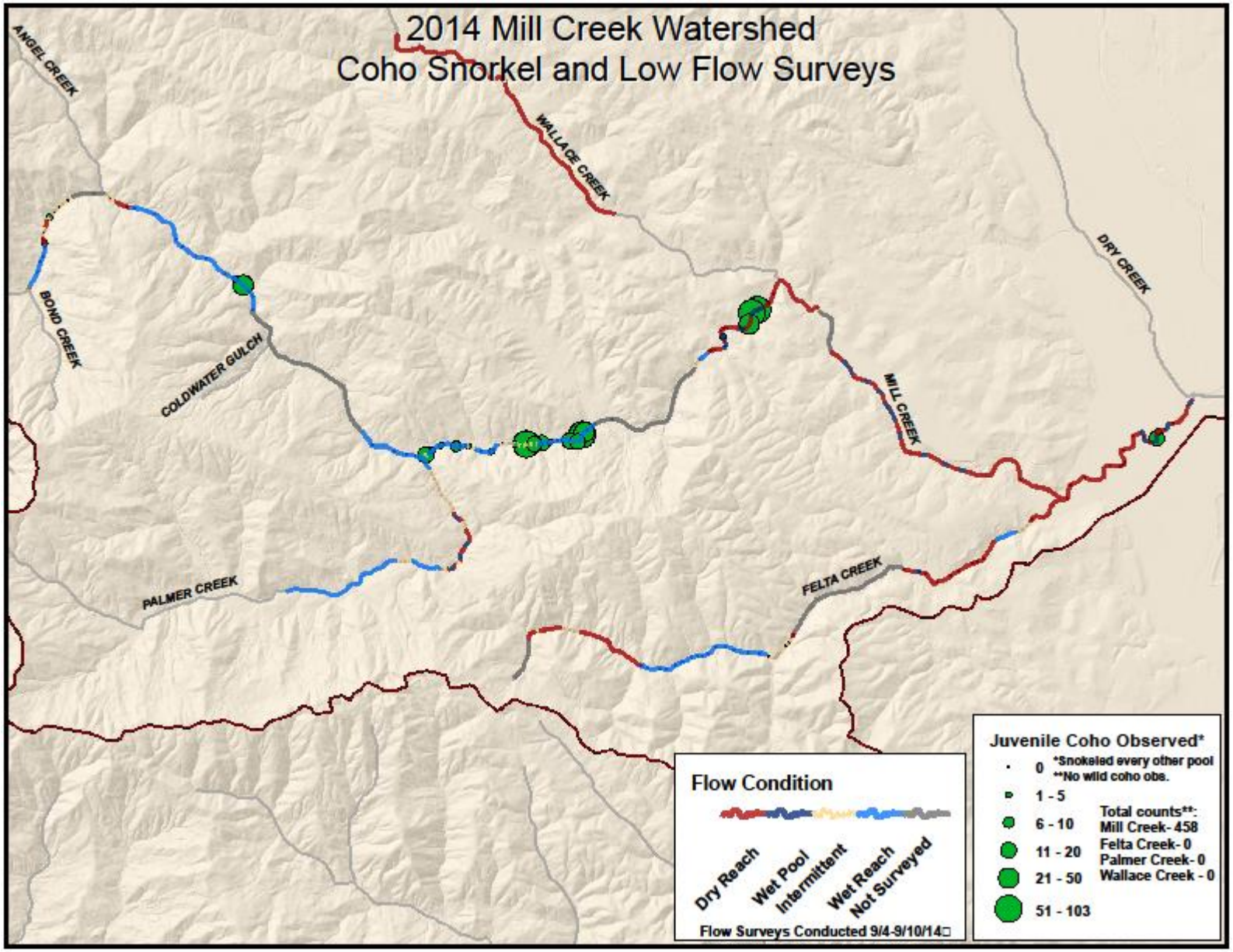
Attachment 16: 2014 Green Valley Creek Coho Snorkel and Low Flow Surveys Map



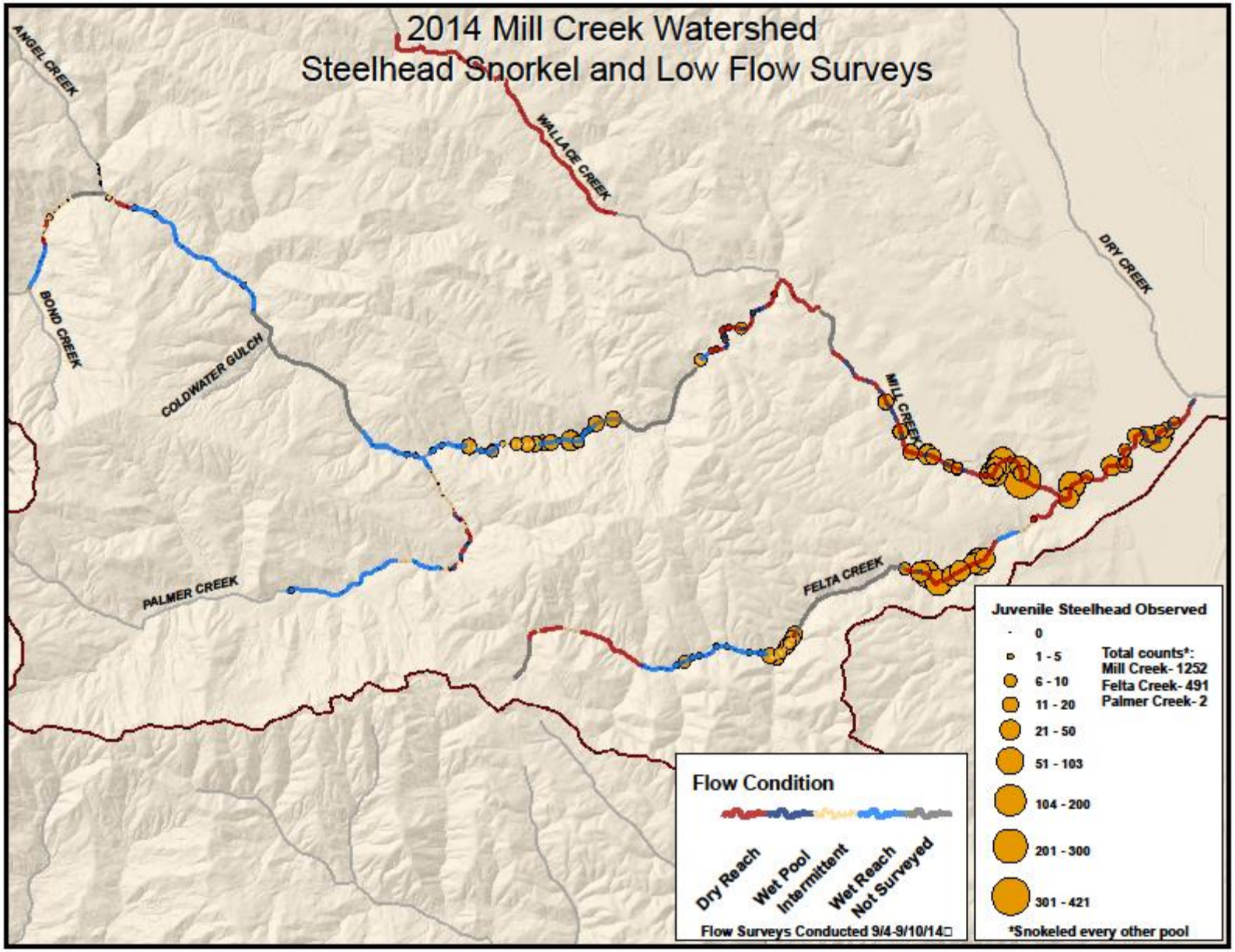
Attachment 17: 2014 Green Valley Creek Steelhead Snorkel and Low Flow Surveys Map



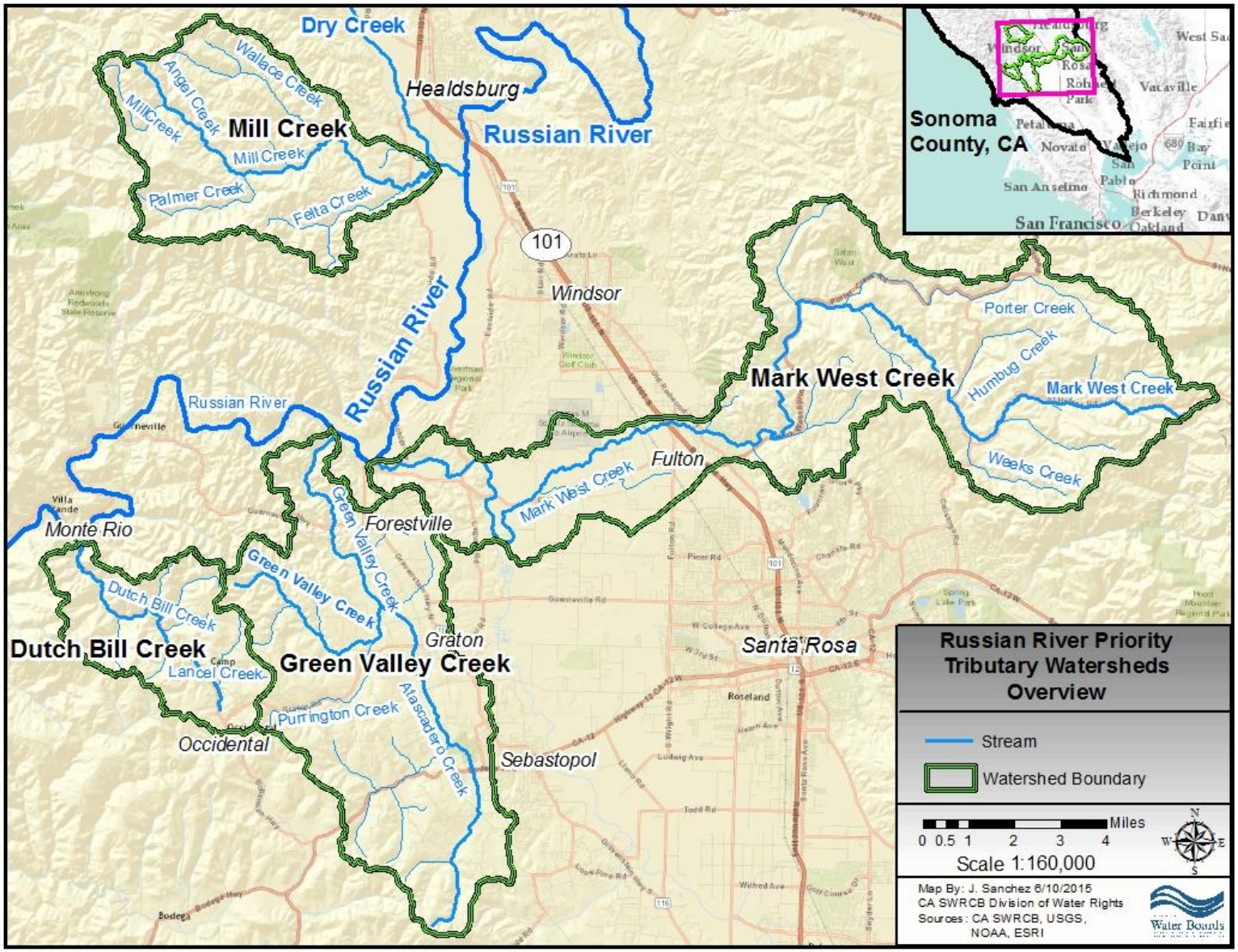
Attachment 18: 2014 Mill Creek Watershed Coho Snorkel and Low Flow Surveys Map



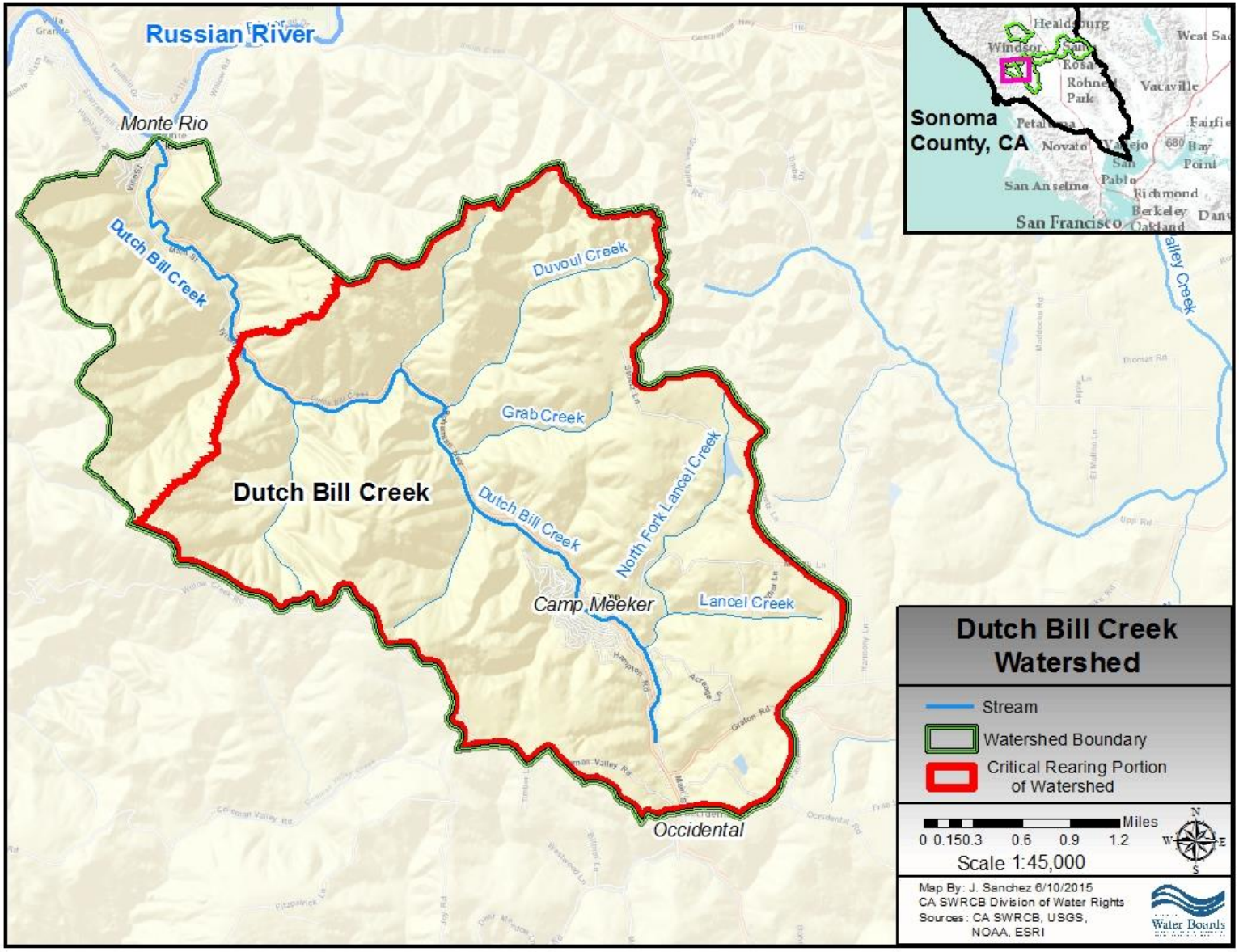
Attachment 19: 2014 Mill Creek Watershed Steelhead Snorkel and Low Flow Surveys Map



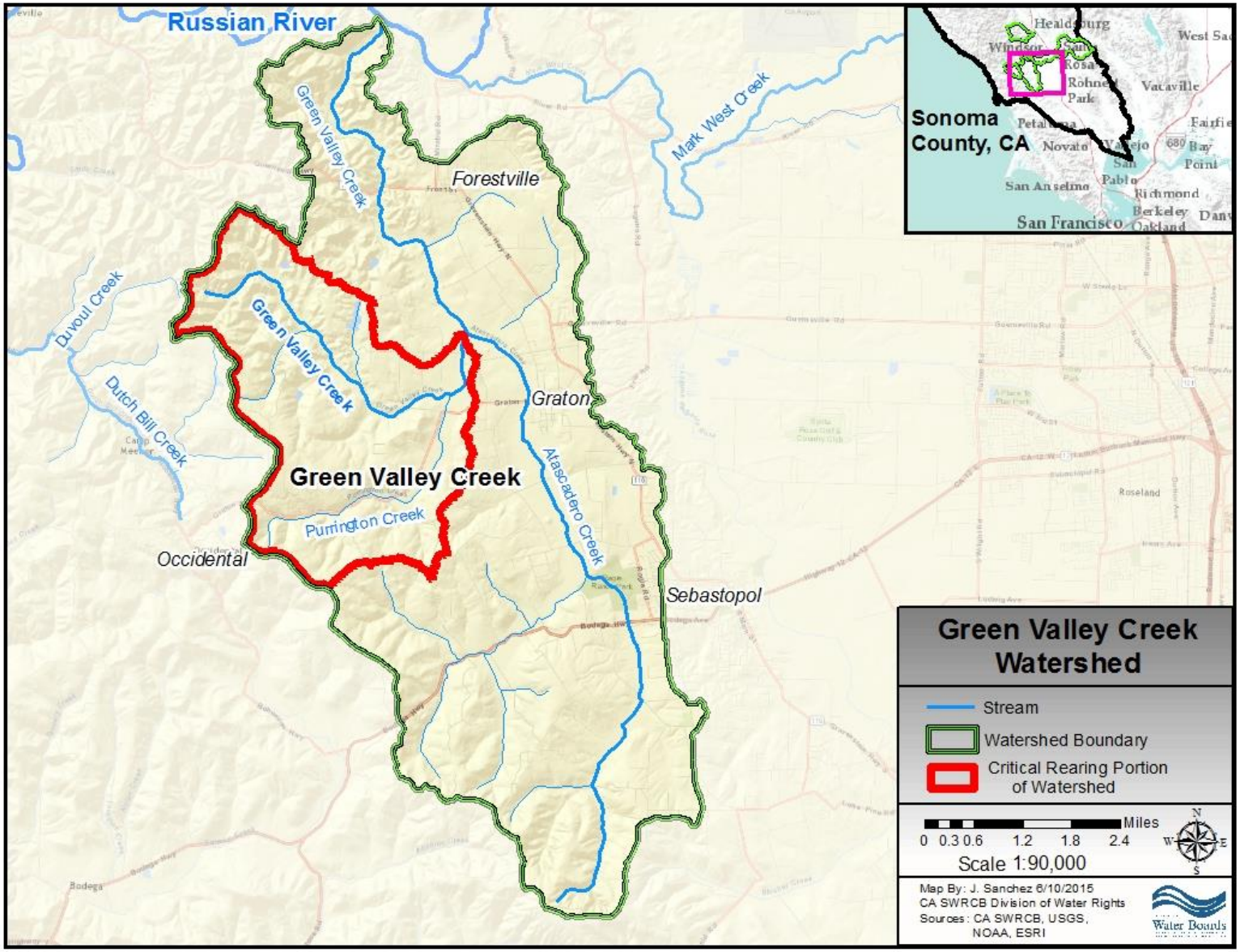
Attachment 20: State Water Board Russian River Priority Tributary Watersheds Overview Map



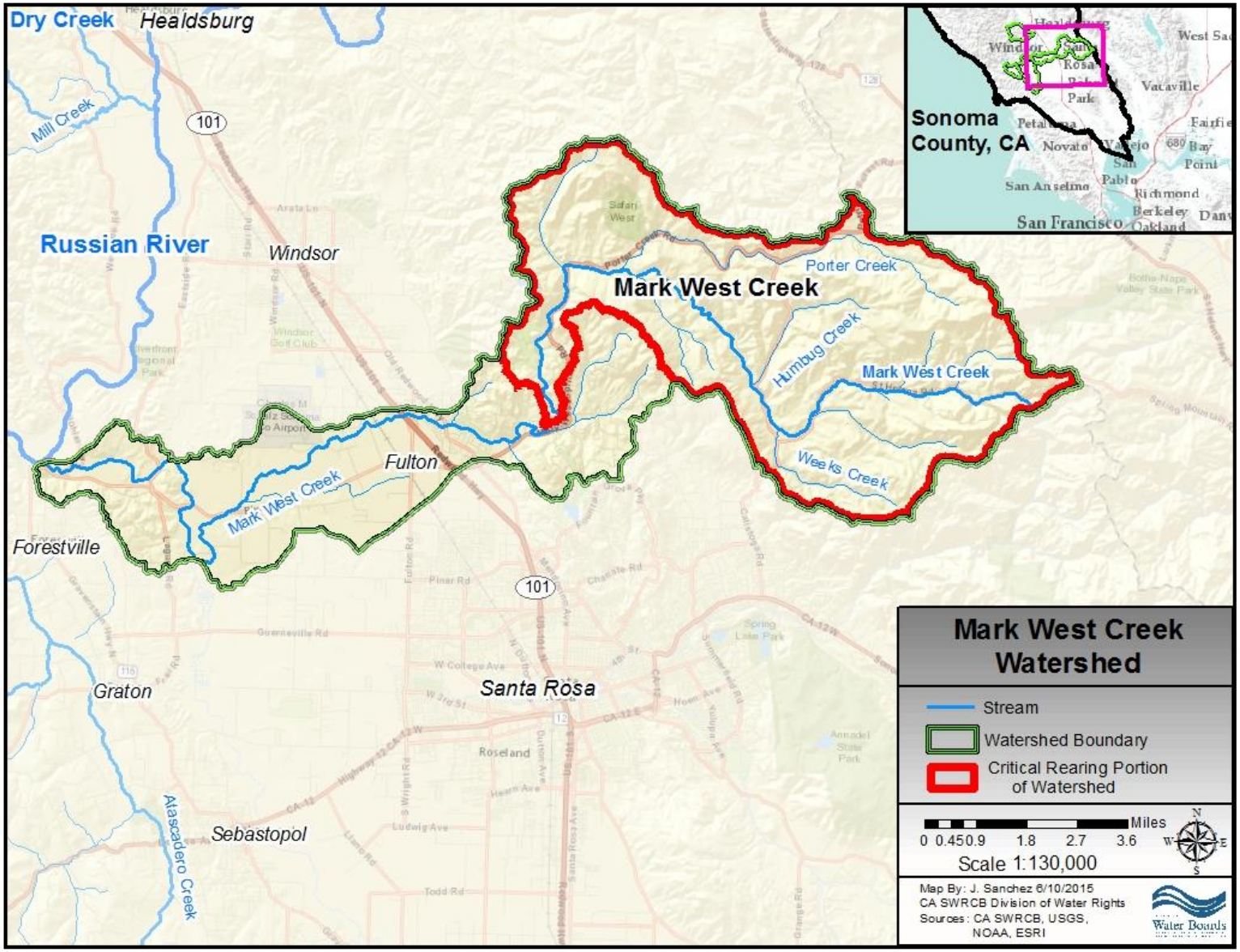
Attachment 21: State Water Board Dutch Bill Creek Watershed Map



Attachment 22: State Water Board Green Valley Creek Watershed Map



Attachment 23: State Water Board Mark West Creek Watershed Map



Attachment 24: State Water Board Mill Creek Watershed Map