

California Regional Water Quality Control Board
North Coast Region

RESOLUTION No. R1-2011-0069
MONTH DATE September 29, 2011

Policy

For

Implementation of the Water Quality Objective for Temperature
in the North Coast Region

WHEREAS, the California Regional Water Quality Control Board, North Coast Region,
(hereinafter the Regional Water Board) finds that:

Introduction

1. ~~Elevated water temperature is the most a widespread water quality impairment in the North Coast Region. There~~ The purpose of this policy is no single water quality parameter more influential in determining which beneficial uses are present in North Coast water bodies. The effects of temperature are far-reaching: impacting growth, feeding, fecundity, incubation, and infection rates describe the range of organisms, as well as chemical reaction rates, the oxygen concentration in water, and seasonal migration cues of aquatic species. The alarming decline in populations of the iconic aquatic species of the North Coast - salmon and steelhead - is partly reflective of the shrinking extent of cold water ecosystems in the North Coast Region.
- 2.1. ~~Over 60 percent of North Coast watersheds are listed as impaired for temperature, evidence that past implementation of regulatory control tools available for protection against anthropogenically elevated water temperatures is not adequate to remediate, restore, and protect temperature-impaired water bodies and to control the cumulative impacts of elevated water temperature on such watersheds. It attempts to describe in one cohesive document the Regional Water Board's efforts to date in implementing temperature objectives and guidance on the range of implementation tools for temperature protection in future programs and permits, including coordination with other state, local and federal agencies to the extent possible. It affirms the need to address water temperatures region-wide but on a case-by-case basis in the context of a given permit or other action to reduce impairments and prevent further impairment. It directs staff to continue implementing temperature TMDLs through regional nonpoint source programs and individual permits, waivers, and enrollments as appropriate, and to work with other agencies to address elevated water temperatures.~~

~~3.2.~~ The prevention of water quality impacts from temperature related factors has been a high priority in the North Coast Region for many years. The Regional Water Board has ranked the control of temperature impacts as a high priority under the Triennial Review process since 2001. ~~In 2007, this issue was again ranked such that staff was directed to proceed with work that could result in a Basin Plan amendment.~~ The triennial review also included two other high priority issues that are relevant in the development of a regionwide temperature control program; the stream and wetlands system protection policy and instream flow objective.

~~Temperature impairments are predominantly associated with nonpoint source pollution, which is generally defined as pollution that is not a "point source discharge" requiring an NPDES permit under the federal Clean Water Act.⁴ Under the state Porter-Cologne Water Quality Act, nonpoint source discharges of waste are regulated under waste discharge requirements (WDRs), waivers of WDRs, prohibitions, or a combination thereof. Temperature is also addressed in water quality certifications issued pursuant to section 401 of the Clean Water Act. As explained in more detail below, the Regional Water Board has been implementing temperature controls in its region-wide nonpoint source pollution programs, and in individual permits on a case-by-case basis, often in the context of sediment discharges. Elevated temperature is also caused by factors outside the core regulatory programs of the Regional Water Board that may be addressed by other public agencies, for example water diversions under the jurisdiction of the State Water Resources Control Board (State Water Board), Division of Water Rights.~~

Basin Plan Temperature Standards

5. The Water Quality Control Plan for the North Coast Region (hereinafter the Basin Plan) designates the beneficial uses of waterbodies within the North Coast Region. These uses include, but are not limited to, municipal drinking water use (MUN); cold freshwater habitat (COLD); warm freshwater habitat (WARM); estuarine habitat (EST); migration of aquatic organisms (MIGR); support of habitats necessary, at least in part, for the survival and successful maintenance of rare, threatened, or endangered plant or animal species (RARE); and spawning,

⁴ ~~The discharge of waste associated with storm water drainage system-related point sources has the potential to increase water temperature in a receiving waterbody. However, storm water discharges predominantly occur during periods of rainfall, when water temperatures generally support beneficial uses. Discharges not associated with rainfall events (non-storm water discharges) are sometimes discharged through storm water conveyance systems, thus the possibility of water temperature impacts associated with storm water systems must be considered. The discharge of waste associated with other point sources also has the potential to increase water temperatures in the receiving waterbody. However, point source discharges are generally not permitted in any North Coast basins except the Russian and Eel River watersheds, where winter time discharges are permitted at high dilution ratios. These discharges do not exceed the water quality objective for temperature, as permitted.~~

reproduction, and early development of fish (SPWN). The Basin Plan also establishes water quality objectives, including water temperature objectives, for the protection of these beneficial uses. The beneficial uses of water bodies, water quality objectives, and anti-degradation policies, together, constitute water quality standards.

6. The Basin Plan defines the cold freshwater habitat (COLD) beneficial use as: "Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates." In the North Coast Region, the iconic cold water species are salmon and steelhead. In addition, there are many other organisms, such as frogs, salamanders, aquatic insects, and resident fish species, that require a cold freshwater ecosystem for survival.

7. The Basin Plan defines the intrastate water quality objective for temperature as: "The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses.

At no time or place shall the temperature of any COLD water be increased by more than 5°F above natural receiving water temperature.

At no time or place shall the temperature of any WARM water be increased by more than 5°F above natural receiving water temperature."

Natural receiving water temperatures are those that result when the factors that drive water temperatures are consistent with natural conditions. The most prominent factors are hydrology, solar radiation (the inverse of shade), air temperature, and channel geometry.

8. The Basin Plan defines the interstate water quality objective for temperature as: "Elevated temperature waste discharges into COLD interstate waters are prohibited," and, "Thermal waste discharges having a maximum temperature greater than 5°F above natural receiving water temperature are prohibited," and, "Elevated temperature wastes shall not cause the temperature of WARM interstate waters to increase by more than 5°F above natural temperature at any time or place."

TMDL Development

9. Section 303(d) of the Clean Water Act requires states to address impaired waters by developing a total maximum daily load (TMDL) or implementing another

program that will result in the attainment of water quality standards. TMDLs establish the maximum load of a pollutant that can be assimilated without exceeding the applicable water quality standards. Temperature TMDLs include a source analysis, interpretation of water quality objectives, and load allocations that divide the allowable loading among the sources in a way that results in attainment of the water quality standards when achieved.

10. The Regional Water Board has adopted temperature TMDLs for the Salmon, Scott, Shasta, and Klamath Rivers. The U.S. Environmental Protection Agency (EPA), Region IX, has established temperature TMDLs for the following water bodies in the North Coast Region: the Eel River (six reaches), Mattole River, and Navarro River. Each of these TMDLs includes a temperature source analysis, TMDL calculation, load allocations, and a margin of safety.

~~11. Temperature TMDL analyses completed to date have consistently found the same factors to be responsible for elevated water temperatures: increased exposure to solar radiation due to loss of stream shade, physical stream channel alteration in response to elevated sediment loads, and in some cases agricultural tail water, impoundments, and water diversions.²~~

~~12.11.~~ EPA did not adopt plans of implementation for its TMDLs because it lacks implementation authority over nonpoint source pollution. EPA did include specific implementation recommendations for achieving the temperature load allocations. Those recommendations include the use of the timber harvest permitting process to protect and restore natural shade, implementation of the United States Forest Service (USFS) Northwest Forest Plan and associated standards and guidelines, and the control of sediment to achieve temperature standards.

~~13.12.~~ Under Clean Water Act section 303(d)(2), the State must incorporate EPA TMDLs into its Water Quality Management Plan after they are approved. Clean Water Act section 303(e) requires EPA approval of a State's continuing planning process, which includes Basin Plans, regulatory programs, monitoring and quality assurance programs, nonpoint source management programs, and funding assistance programs. Similar to the Sediment TMDL Policy discussed below, this Policy is intended to implement temperature TMDLs, including EPA temperature TMDLs in compliance with Clean Water Act section 303(d)(2). ~~As discussed below, this Resolution directs staff to incorporate the Temperature Policy into the Basin Plan as soon as possible. The proposed Basin Plan amendment shall be submitted to the Regional Water Board for consideration no later than December 31, 2013.~~

² For example, agricultural tail water was identified as a significant contributor to temperature impairment in the Shasta River watershed.

44.13. _____ Under State law, TMDLs are adopted with programs that implement correction of the impairment. The Water Quality Control Policy for Addressing Impaired Waters: Regulatory Structure and Options (Impaired Waters Policy) is a statewide policy that describes the process for developing and adopting TMDLs. TMDLs may be adopted in any of the following ways:

1. TMDLs and TMDL implementation strategies may be adopted with a Basin Plan amendment or another regulation or policy for water quality control that is designed to guide the Regional Water Board in correcting the impairment.
2. TMDLs and TMDL implementation strategies may be adopted with a permitting action, enforcement action, or other single regulatory action.
3. TMDLs and TMDL implementation strategies may be adopted with a resolution that certifies either that (1) a regulatory program has been adopted and is being implemented by another state, regional, local, or federal agency; or (2) a non-regulatory program is being implemented by another entity. (State Water Board Resolution No. 2005-0050, at p.8.)

If adopted under 2 or 3 above, the TMDLs must be referenced in the relevant Basin Plan before or during the next triennial review. (*Id.* at p. 9.)

45.14. _____ To date, the Regional Water Board has adopted three peer-reviewed temperature TMDLs as Basin Plan amendments, each with accompanying plans of implementation, generally titled "action plans" that contain various implementation measures. All of the existing temperature TMDL action plans encourage and direct parties responsible for the management of riparian areas to implement riparian management measures that meet the riparian shade allocations and water quality standards. Temperature TMDLs developed in watersheds also impaired by sediment rely on the implementation of sediment TMDLs to achieve sediment reductions that are also necessary to achieve the temperature TMDLs.

15. In 2009, the Sierra Club and several other non-profit environmental groups filed a lawsuit alleging that the Regional Water Board violated mandatory duties under the Porter-Cologne Water Quality Control Act, Water Code section 13000 et seq., section 303(d) of the Federal Clean Water Act, 33 U.S.C. section 1313(d), in failing to adopt a program of implementation for TMDLs for certain water quality-impaired waterbodies within the North Coast Region of California. Under section 303(d)(2), once EPA approves or issues a TMDL, the state must incorporate the TMDL into its water quality management plan (Basin Plans are one part of the water quality management plan). The Regional Water Board maintains that it has met all obligations for implementing TMDLs; however, it has not consolidated all of its temperature TMDL implementation efforts into a single document that could serve

as an "implementation plan" for meeting the statutory requirements. In 2004 the RWB adopted a Sediment TMDL Implementation Policy which provides for the control of sediment pollution by using existing permitting and enforcement tools. This temperature implementation policy is similar but broader in describing an approach that, where possible and if appropriate and necessary, encourages the combination of TMDL requirements with region-wide nonpoint source programs for efficiency and to avoid duplicative regulation.

16. Temperature TMDL analyses completed to date have consistently found the same factors to be responsible for elevated water temperatures: increased exposure to solar radiation due to loss of stream shade, physical stream channel alteration in response to elevated sediment loads, and in some cases agricultural tail water, impoundments, and water diversions.

46. Temperature impairments are predominantly associated with nonpoint source pollution, which is generally defined as pollution that is not a "point source discharge" requiring an NPDES permit under the federal Clean Water Act.³ Under the state Porter-Cologne Water Quality Act, nonpoint source discharges of waste are regulated under waste discharge requirements (WDRs), waivers of WDRs, prohibitions, or a combination thereof. Temperature is also addressed in water quality certifications issued pursuant to section 401 of the Clean Water Act. As explained in more detail below, the Regional Water Board has been implementing temperature controls in its region-wide nonpoint source pollution programs, and in individual permits on a case-by-case basis, often in the context of sediment discharges. Elevated temperature is also caused by factors outside the core regulatory programs of the Regional Water Board that may be addressed by other public agencies, for example water diversions under the jurisdiction of the State Water Resources Control Board (State Water Board), Division of Water Rights. In addition, action plans may also include specific implementation actions tailored for the watershed. For example, the TMDL action plan for the Shasta River directs parties responsible for managing irrigation tailwater to ensure that their tailwater discharges do not increase the temperature of the receiving water, and establishes

³ The discharge of waste associated with storm water drainage system-related point sources has the potential to increase water temperature in a receiving waterbody. However, storm water discharges predominantly occur during periods of rainfall, when water temperatures generally support beneficial uses. Discharges not associated with rainfall events (non-storm water discharges) are sometimes discharged through storm water conveyance systems, thus the possibility of water temperature impacts associated with storm water systems must be considered. The discharge of waste associated with other point sources also has the potential to increase water temperatures in the receiving waterbody. However, point source discharges are generally not permitted in any North Coast basins except the Russian and Eel River watersheds, where winter time discharges are permitted at high dilution ratios. These discharges do not exceed the water quality objective for temperature, as permitted.

landslides and debris flows ~~originating upstream.~~ Maintenance of a vegetated buffer along streams also ensures a supply of large woody debris to the stream channel, which is critical for metering of sediment, channel forming processes, and fish habitat.

Incorporating Riparian Management and other Temperature Controls into Region-Wide Permitting

~~22. Existing temperature TMDLs have affirmed the need for natural shade conditions for attainment of the intrastate water quality objective for temperature, require site-potential shade conditions, and require the control of anthropogenic sediment discharges. Further, the results of the existing temperature TMDL analyses and the widespread temperature impairment in the North Coast point to the need to address the effects of shade removal on elevated water temperature on a region-wide basis. Because riparian management necessary to implement TMDL load allocations is also necessary to achieve the intrastate water quality objective for temperature in the Basin Plan, a consistent region-wide approach will ensure adequate and efficient implementation of both. Previously developed TMDLs serve as foundational technical documents upon which to base implementation actions for other waterbodies along with any other available and pertinent information, data, and analyses.~~

~~23.24. Completed sediment and temperature TMDLs identify and assign load allocations to similar categories of land uses that generate nonpoint source discharges of waste and pollution, such as timber harvest, roads, agriculture, and grazing. Implementation actions taken to achieve load allocations should be consistent with the Porter-Cologne Water Quality Control Act, as described in the *Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program*, which requires nonpoint sources be regulated under WDRs, waivers, of WDRs, a Basin Plan prohibition, or some combination of these tools. Future permits should establish conditions that ensure compliance with TMDL load allocations and the intrastate water quality objective for temperature. This Policy affirms existing requirements that all current and proposed nonpoint source discharges must be regulated under WDRs, waivers of WDRs, a Basin Plan prohibition, or some combination of these tools.~~

~~24.25. Often, the same management measures are needed to can address nonpoint source water quality concerns regardless of whether or not the waterbody is impaired. In addition, often several pollutants can be addressed by the same management measure, particularly sediment and temperature, and sometimes nutrients. Where possible, it is sensible to combine In the past, the Regional Water Board has included conditions that ensure compliance with TMDL load allocations and the intrastate water quality requirements objective for temperature under one permitting structure- (i.e. waiver or WDR) where possible. Incorporating TMDL implementation into a broad-based nonpoint source approach increases efficiency and consistency in regulation. ~~The Regional Water Board~~~~

~~enforces TMDL requirements through basin-wide and region-wide programs where possible, rather than piecemeal various requirements in each TMDL action plan. avoids overlapping water quality regulation.~~

26. Certain nonpoint source activities may be subject to regulatory or nonregulatory actions of other entities that provide temperature protections. If the Regional Board determines that those actions will result in attainment of water quality standards, the Regional Board may include those actions as implementation measures in a permit. The Regional Water Board can, and often does, rely on existing non-Water Board programs for permit measures, adding new requirements only as necessary to provide adequate water quality protection. (See e.g. finding 30 [discussion of the USFS Waiver].)⁴ When addressing compliance with the temperature objective, the geographic location, existing regulatory and nonregulatory programs, and other relevant factors should be evaluated in determining appropriate and necessary shade controls. This policy in no way limits the State Water Board or Regional Water Board's authority and discretion to develop riparian management measures as appropriate for a specific land use or geographic area.

~~25-27. _____ In 2004, the Regional Water Board adopted the *Total Maximum Daily Load Implementation Policy Statement for Sediment Impaired Receiving Waters in the North Coast Region* (Resolution R1-2004-0087) ("Sediment Policy"), which directs staff to use existing authorities to strengthen regulatory controls of nonpoint source discharges of sediment. Implementation of that Policy also partially implements the intrastate water quality objective for temperature insofar as the control of sediment discharges partially addresses elevated water temperatures. Sediment discharges contribute to elevated conditions interact with water temperatures by changing the physical attributes of a stream channel, including width, depth, and sinuosity, and by removing or preventing re-establishment of shade-producing vegetation in and near the stream channel. many ways that affect water temperatures. Therefore, practices implemented to prevent and minimize elevated sediment discharges (e.g., vegetated buffers for sediment filtering, avoidance of activities resulting in disturbance of inner gorges and other unstable areas near streams, appropriately designed stream crossings, properly managed road runoff, etc.) are also required for the control of elevated water temperatures. This ~~resolution~~policy directs staff to~~

⁴ In some cases, an aquatic Habitat Conservation Plan (HCP) contains requirements that meet or are even more protective than necessary to meet the temperature objectives. An example of this is the Green Diamond aquatic HCP, which includes retention and recruitment measures that exceed ASP rules in density and geographic location. The HCP riparian management standards call for high levels of canopy retention within 150 feet of fish-bearing streams and 100 feet of all other streams supporting aquatic life. These measures are being considered and are expected to be relied upon for TMDL and temperature objective compliance in the development of property-wide WDR.

implement the Sediment Policy as a means of addressing elevated water temperature associated with excess sediment discharges.

26-28. The Regional Water Board has made the most progress to date in implementing comprehensive nonpoint source permit coverage for timber harvest activities. Timber harvest activities ~~can have the potential to impact water temperature by reducing shade, increasing sediment loads, and altering microclimates, depending on how the activities are conducted.~~ For timber harvest activities on private lands, the Regional Water Board ~~prefers to incorporate~~ incorporates the California Board of Forestry's Forest Practice Rules into water quality permits for ease of reference, for consistent terminology, to avoid duplicative processes to the degree possible. The California Department of Forestry and Fire Protection (CAL FIRE), as the agency approving timber harvest activities on private lands, convenes a multi-agency team that includes CAL FIRE, the California Department of Fish and Game, the California Regional Water Quality Control Boards, the California Geological Survey, and other agencies as needed, to conduct a review of a timber harvest plan (THP). Each agency may recommend ~~incorporation of~~ incorporating mitigating measures into the plan to reduce adverse impacts of the operation on timberland resources, including the beneficial uses of water. Through this process, Regional Water Board staff have an opportunity to make specific THP recommendations so that the final THP is compliant with the Basin Plan and eligible for the timber WDRs or waivers. Under the Forest Practice Rules, timber operations within designated watercourse and lake protection zones must adhere to canopy retention standards to address stream temperature issues, sediment and nutrient loading, and recruitment of large woody debris. ~~In some instances Regional Water Board permits include canopy retention requirements different from the Forest Practice Rules.~~ Recent modifications to the Forest Practice Rules to address anadromous fish habitat (Anadromous Salmonid Protection rules) have resulted in canopy retention standards that are generally protective of shade and water temperatures in the areas where they apply. Compliance with the intrastate water quality objective for temperature may in some instances require additional canopy protections, particularly in areas outside the range of anadromy.

27-29. In 2004, the Regional Water Board adopted Order R1-2004-0030: General Waste Discharge Requirements for Discharges Related to Timber Harvest Activities on Non-Federal Lands in the North Coast Region (Timber GWDR). The Timber GWDRs contains a requirement that all water quality requirements must be met to qualify for enrollment in the Timber GWDRs. As defined, water quality requirements include water quality objectives (narrative or numeric), prohibitions, TMDL implementation plans, policies, or other requirements contained in a water quality control plan adopted by the Regional Water Board and approved by the State Water Board, and all other applicable plans or policies adopted by the Regional Water Board or State Water Board, including, but not limited to, the State Water Board Resolution No. 68-16: Statement of Policy with Respect to Maintaining High Quality Waters in California. Because TMDL load

allocations are established as necessary conditions for achievement of water quality standards (i.e., water quality objectives in the context of beneficial uses), applicable load allocations should be incorporated into a THP to qualify for enrollment in the Timber GWDR. ~~Staff should implement~~ This policy directs staff to continue implementing temperature load allocations through Timber GWDR enrollments in areas subject to existing temperature TMDLs, including EPA-established temperature TMDLs. Staff should implement similar shade controls through Timber GWDR enrollments in areas listed as impaired for temperature, as appropriate. ~~Similar shade~~ Shade controls for Timber GWDR enrollments region-wide, as appropriate and necessary, will prevent future impairments and ensure compliance with the intrastate water quality objective for temperature.

~~28-30.~~ 28-30. In 2009, the Regional Water Board adopted Order R1-2009-0038: Categorical Waiver of Waste Discharge Requirements for Discharges Related to Timber Harvest Activities On Non-Federal Lands in the North Coast Region (Non-Federal Timber Waiver). The Non-Federal Timber Waiver includes conditions that implement TMDL load allocations and meet the Basin Plan intrastate temperature objective by ~~preserving natural shade where present and restoring it where it is not present.~~ The Non-Federal Timber Waiver requires ~~85% overhead canopy within 75 feet of a class I stream, 50 feet of a class II stream, and 65% overhead canopy for the remainder of the watercourse and lake protection zone.~~ Order R1-2009-0038 allows the approval of alternatives to these specific requirements if they provide equal or better protection. These particular canopy requirements are currently not required for Non-Industrial Timber Management Plans while they are being reviewed by Regional Water Board staff pursuant to Order R1-2011-0038, *Limited Term Amendment to NTMP Provisions of Order No. R1-2009-0038, Categorical Waiver of Waste Discharge Requirements for Discharges Related to Timber Harvest Activities on Non-Federal Lands in the North Coast Region.* providing shade. This policy directs staff to continue implementing the Non-Federal Timber Waiver as a mechanism for compliance with temperature TMDLs, including EPA-established TMDLs, and the intrastate water quality temperature objective.

~~29-31.~~ 29-31. In 2010, the Regional Water Board issued Order R1-2010-0029: *Waiver of Waste Discharge Requirements for Nonpoint Source Discharges Related to Certain Federal Land Management Activities on National Forest System Lands in the North Coast Region* (USFS Waiver), a conditional waiver addressing certain nonpoint source activities on United States Forest Service lands in the region, including timber, roads, and grazing. This permit, by virtue of its conditions, also implements sediment, temperature, and nutrient TMDLs, and meets the Basin Plan intrastate temperature objective. Implementation of the USFS waiver and the temperature TMDL action plans meets temperature TMDL load allocations and achieves compliance with the water quality objective for temperature in over half of the North Coast Region. The USFS Waiver adopts requires the USFS manage program that manages and maintain maintains designated riparian zones

to ensure retention of adequate vegetative cover that results in natural shade conditions within 300 feet slope distance on each side of fish-bearing streams, 150 feet slope distance on each side of perennial streams, and 100 feet slope distance on each side of ephemeral / intermittent streams, or the site potential tree height distance on each side of the stream, whichever is greatest, consistent with the Northwest Forest Plan. The USFS Waiver provides for exceptions to these requirements if it can be demonstrated that the exception will result in a net long-term benefit to water quality and stream temperatures. This policy directs staff to continue implementing the USFS Waiver as a mechanism for compliance with temperature TMDLs, including EPA-established TMDLs, and the intrastate water quality temperature objective.

~~As identified in the Non-Federal Timber Waiver and USFS Waiver, situations exist in which a short-term reduction in shade associated with efforts to restore and/or protect beneficial uses is appropriate. Examples of such situations are the felling of trees for the purposes of re-introducing large woody debris in streams, removal of unnatural accumulations of vegetation resulting from fire suppression in order to reduce the risk of catastrophic wildfire, and the removal of trees in over-stocked stands in order to achieve old-growth stand characteristics on a shorter time scale. Short-term reductions in shade may be allowed when appropriate. This resolution directs Regional Water Board staff to develop additional guidance on this issue.~~

~~31.32. _____ Staff should examine and address temperature when developing other permits for nonpoint source activities. Regional Water Board staff are actively developing region-wide permits for dairies, county road maintenance, and irrigated lands, and shade control is expected to be a component in each of these programs. At a minimum, any program or permit should implement temperature shade load allocations in areas subject to existing temperature TMDLs, including EPA-established temperature TMDLs. Any program or permit should implement similar shade controls riparian management measures in areas listed as impaired for temperature, and region-wide as appropriate and necessary to prevent future impairments and to comply with the intrastate temperature objective. ~~This Resolution in no way limits the State Water Board or Regional Water Board's authority and discretion to develop riparian management measures as appropriate for a specific land use or geographic area.~~~~

~~32.33. _____ The use of riparian areas by livestock can lead to impacts that elevate water temperatures. Intensive use of riparian areas by livestock has been demonstrated to impact water temperatures by increasing channel widths, reducing pool depths, increasing sediment discharges, removing vegetation, preventing growth of new vegetation, and reducing effective shade. However, the use of riparian areas by livestock can be conducted without these impacts if managed thoughtfully properly implemented, with water quality protection in mind. ~~In some cases, the use of livestock as a management tool can be beneficial to riparian growth, and therefore, water temperatures.~~ The intensity, duration, and~~

timing of livestock use are critical considerations that determine whether livestock use is or is not harmful to riparian areas. This policy directs staff to participate in the State Water Resource Control Board's statewide grazing program development process to ensure that factors that elevate water temperatures or preserve existing cold water resources are considered and addressed.

~~33.34.~~ _____ The USFS Waiver includes adequate temperature controls for livestock grazing. For non-USFS land, Regional Water Board staff is currently participating in a collaborative effort involving the State Water Resource Control Board and multiple regions to develop a grazing regulatory program to address water quality impacts associated with livestock grazing in impaired waters. Given the potential for livestock use of riparian areas to elevate water temperatures, it is important that any program associated with grazing address factors that elevate water temperatures. This Resolution policy directs staff to participate in the grazing regulatory program development process to ensure that consider and address factors that elevate water temperatures or impact existing cold water resources are considered and addressed.

~~34.35.~~ _____ The excess water diverted for flood irrigation and returned to streams (irrigation tailwater discharge) can elevate the temperature of the receiving stream. Depending on the various factors, including time of year and day that the tailwater discharges to the stream, the temperature of the irrigation tailwater discharge can be substantially higher than the receiving water temperature, thus elevating the temperature of the receiving water. ~~In the Shasta River watershed, irrigation tailwater discharge is a prevalent and significant water quality concern. The Shasta TMDL waives waste discharge requirements for parties responsible for tailwater discharges if they are participating in on-going collaborative programs and implement recommended measures identified in the Action Plan for the Shasta River Temperature and Dissolved Oxygen Total Maximum Daily Loads, as applicable. The Regional Water Board administers grants that fund a program to identify and prioritize irrigation tailwater discharges for tailwater recovery projects. Irrigation tailwater discharges are not as common in most other North Coast watersheds. However, where they occur they have great potential to elevate water temperatures and discharge pollutants such as nutrients, pathogens, and sediment. Regional Water Board staff are currently developing an irrigated lands water quality program. Elevated water temperatures associated with irrigation tailwater discharges should be considered and addressed through the irrigated lands water quality program and watershed-specific waivers.~~

Individual and Site-Specific Permitting

~~35.36.~~ _____ In the interim time period while addition to considering and addressing temperature impacts in the development of any nonpoint source region-wide programs are developed, and in the future, as appropriate, the Regional Water Board should continue to employ a range of available regulatory, executive, and enforcement tools to address elevated temperatures on a case-by

- ~~39. The diversion and storage of water has great potential to elevate water temperatures. The reduced flows associated with water diversions can lead to elevated water temperatures in streams by reducing thermal mass and stream depth, and increasing travel times and the associated exposure to solar radiation and other heat inputs. The water impounded behind a dam stores heat, which can alter the daily temperature variation and the seasonal pattern of water temperatures downstream. The water temperature alteration caused by impoundments can result in exceedance of the intrastate water quality objective for temperature.~~
40. The diversion and storage of water has potential to elevate water temperatures. The State Water Board's Division of Water Rights (Division of Water Rights) issues water right permits for the diversion of surface waters and Regional Water Board staff often work with Division of Water Rights staff to ensure Basin Plan requirements are reflected in water right permits and other water right orders. The *Policy for Maintaining Instream Flows in Northern California Coastal Streams* (May 4, 2010) specifically calls for involvement by Regional Water Boards as a means of ensuring adequate consideration of water quality concerns. The Division of Water Rights also issues 401 water quality certifications for projects requiring a Federal Energy Regulatory Commission (FERC) license. Regional Water Board staff provide recommendations and identify water quality conditions that are necessary to ensure that the activity will comply with water quality standards. This Resolution directs Regional Water Board staff to continue to work with the Division of Water Rights to ensure that temperature and other water quality concerns are identified and addressed in the water right permitting process in all waterbodies, including but not limited to those addressed through the *Policy for Maintaining Instream Flows in Northern California Coastal Streams*.
41. Regional Water Board staff often submit water quality comments to cities and counties during the development of their ordinances and general plans. State guidelines state that local general plans should incorporate water quality policies from Basin Plans to the extent they are relevant. The planning and land use authorities entrusted to cities and counties include the authority to limit impacts to waters of the state and other natural resources from land uses. This Resolution directs staff to continue to provide cities and counties guidance and recommendations on compliance with the Basin Plan, and specifically the intrastate water quality objective for temperature.
42. Programs and activities implemented by other state and federal agencies often address or have the potential to affect conditions that influence water temperatures. The Regional Water Board routinely reviews financial and technical assistance programs, development activities, environmental impact statements, rule making, and monitoring programs developed and/or administered by agencies, such as the US Department of Agriculture, Natural Resource Conservation

Service, US Army Corps of Engineers, US Bureau of Reclamation, US Forest Service, Federal Energy Regulatory Commission, Department of Defense, National Park Service, CAL FIRE, and Bureau of Land Management. This Resolution directs staff to continue to provide state and federal agencies guidance and recommendations on compliance with the Basin Plan, and specifically the intrastate water quality objective for temperature.

43. The Regional Water Board often supports and coordinates with the Natural Resource Conservation Service, Resource Conservation Districts, and the University of California Cooperative Extension on landowner outreach and agricultural nonpoint source reduction efforts, and relies on their landowner assistance programs for implementation of appropriate nonpoint source management practices on private lands. This Resolution directs staff to continue to work with the Natural Resource Conservation Service, Resource Conservation Districts, and the University of California Cooperative Extension to provide landowners guidance on compliance with the intrastate water quality objective for temperature, and assistance with implementation of actions that support water quality.

Monitoring

44. Monitoring is an important element of any regulatory program. ~~A robust monitoring plan provides information describing the degree to which management measures are implemented, are effective at a site scale, and whether the water quality is improving downstream as a result of implementation.~~ Implementation and effectiveness monitoring are often incorporated into permits and grant agreements and reported through those processes. ~~Water temperature monitoring results are most often reflective of cumulative effects of upstream conditions.~~ This Resolution directs staff to:
- incorporate monitoring into permits and grant agreements as necessary and appropriate in order to confirm management actions required to prevent or reduce elevated temperatures are implemented and effective; and
 - develop and implement a region-wide water temperature trend monitoring program to determine if the long-term effectiveness of the Temperature Policy.

Other Findings

- ~~47.45.~~ The extent of cold water resources in the North Coast Region is a critical factor that determines the abundance and diversity of aquatic organisms in the region. A consistent, region-wide approach to temperature control This Policy is consistent with the provisions of the State Water Resources Control Board Resolution No. 68-16: the *Statement of Policy with Respect to Maintaining High Quality Waters in California*. Resolution No. 68-16 incorporates the federal Anti-degradation Policy.

48.46. ~~_____~~ This policy ~~statement~~ does not constitute a discretionary permit or regulation or other discretionary action constituting a “project” as that term is defined by the California Environmental Quality Act (CEQA). (14 Cal. Code Regs., tit. 14, §15378.) Thus, no environmental review is required under CEQA. Moreover, if this policy ~~statement~~ were construed as a project triggering CEQA review obligations, consistent with the CEQA Guidelines’ Class 7 and Class 8 Exemptions, this policy ~~statement~~ is an action taken by a regulatory agency to “assure the maintenance, restoration, or enhancement of a natural resource where the regulatory process involves procedures for protection of the environment.” (14 Cal. Code Regs., tit. 14, §§15307 & 15308.)

THEREFORE, BE IT RESOLVED THAT:

1. ~~A~~The Temperature Policy shall be incorporated into the Basin Plan as soon as possible. The proposed Basin Plan amendment shall be submitted to the Regional Water Board for consideration no later than December 31, 2013.
2. The Board has authority to implement temperature TMDLs through a combination of riparian management and other temperature controls as appropriate in nonpoint source control programs; individual permitting, grants and loans, and enforcement actions; support of restoration projects; and coordination with other agencies with jurisdiction over controllable factors that influence water temperature.
3. This policy in no way limits the State Water Board or Regional Water Board’s authority and discretion to develop riparian management measures as appropriate and necessary for a specific land use or geographic area, and in consideration of existing regulatory and non-regulatory programs in place that provide temperature protections.
4. Staff should continue to implement the Sediment Policy as a means of addressing elevated water temperature associated with excess sediment discharges.
5. Staff should continue implementing the Non-Federal Timber Waiver and USFS Waiver as a mechanism for compliance with temperature TMDLs, including EPA-established TMDLs, and the intrastate water quality temperature objective.
- ~~3.6.~~ Staff should continue to implement shade load allocations through Timber WDR, ~~Non-Federal Timber Waiver, and USFS Waiver~~ enrollments in areas subject to existing temperature TMDLs, including EPA-established temperature TMDLs, based on existing legal authority. Staff should implement similar shade controls through Timber WDR enrollments in areas listed as impaired for temperature but lacking a TMDL, and region-wide as appropriate and necessary to prevent future impairments and to comply with the intrastate temperature objective.

- 4.7. Staff should examine and address temperature impacts when developing ~~other~~ permits or programs for nonpoint source activities, including those for dairies, county road maintenance and construction, and irrigated agriculture. Staff should consider all available measures to prevent and control the elevation of water temperatures such as sediment Best Management Practices and cleanups, riparian management including shade, and mitigation of tailwater and impoundments, as appropriate, in permit or program development. It is the intent of the board to address elevated water temperatures associated with irrigation tailwater discharges through existing TMDL action plans and a future region-wide irrigated lands water quality program.
- 5.8. Staff should participate in the State Water Resource Control Board's statewide grazing program development process to ensure that factors that elevate water temperatures or preserve existing cold water resources are considered and addressed. Additionally, staff should address the water temperature impacts associated with livestock use in waivers, as appropriate. ~~This Resolution in no way limits the State Water Board or Regional Water Board's authority and discretion to develop riparian management measures as appropriate for a specific land use, and~~ necessary.
- 6.9. Staff should address factors that contribute to elevated water temperatures when issuing 401 certifications or WDRs for individual projects. Any permit should be consistent with the assumptions and requirements of temperature shade load allocations in areas subject to existing temperature TMDLs, including EPA-established temperature TMDLs, as appropriate. If applicable, any permit or order should implement similar shade controls as appropriate in areas listed as impaired for temperature but lacking a TMDL and region-wide as appropriate and necessary to prevent future impairments and to comply with the intrastate temperature objective.
- 7.10. Staff should use other regulatory, executive, and enforcement tools, as appropriate, to address elevated water temperatures and preserve existing cold water resources.
- 8.11. The Regional Water Board supports and encourages restoration projects that are designed to eliminate, reduce, or mitigate existing sources of temperature impairments. Staff should continue to administer, encourage, and support the use of grant funds to facilitate projects that address elevated water temperature concerns. Staff should pursue non-regulatory actions with organizations, landowners and individuals to encourage the control of elevated water temperatures, watershed restoration, and protection activities.
- 9.12. Staff should continue to coordinate with State Water Resource Control Board's Division of Water Rights by participating in the water right application and petition process, providing monitoring recommendations, joint compliance inspections,

submittal of data in support of 401 certifications related to water diversions and/or facilities regulated by the Federal Energy Regulatory Commission, participation in instream flow studies, and any other appropriate means to ensure that the terms of water right permits and licenses are consistent with the intrastate water quality objective for temperature, and to maintain instream flow levels sufficient to achieve the intrastate water quality objective for temperature. Regional Water Board staff shall coordinate with Division of Water Rights to maintain instream flow levels sufficient to achieve temperature TMDLs through the Division of Water Rights' administration of the requirements of AB 2121, as described in *the Policy for Maintaining Instream Flows in Northern California Coastal Streams* (May 4, 2010). For the Eel River, Regional Water Board staff shall coordinate with the Division of Water Rights to maintain instream flow levels sufficient to achieve the principles of AB 2121, to the extent consistent with its existing legal authority or by any future extension of AB 2121 applicable to the Eel River.

40-13. Staff should continue to provide cities and counties guidance and recommendations on compliance with the water quality objectives for temperature and work with local governments to develop strategies to address the prevention, reduction, and mitigation of elevated water temperatures, including, but not limited to, riparian ordinances, general plans, and other management policies.

44-14. Staff should continue to provide local, state, and federal agencies, landowners, and the public guidance and recommendations on compliance with the Basin Plan, and specifically the intrastate water quality objective for temperature.

42-15. Staff should continue to participate in the development of the stream and wetland system protection policy to ensure that policy and the policy direction provided herein are consistent and support each other, and in coordination with other state, local and federal policies and programs.

~~Staff should develop a guidance document to assist the public, landowners, organizations, the Regional Water Board staff, and other agencies with the prevention of elevated water temperatures and preservation of existing cold water resources. The Executive Officer shall periodically update this document to incorporate future research, data, and technologies.~~

43-16. Where appropriate, staff should propose monitoring requirements for incorporation into permits, programs, and other orders in order to confirm management actions required to prevent or reduce elevated temperatures are implemented and effective.

44-17. Staff should develop and implement a region-wide water temperature trend monitoring program to assist the Regional Water Board in determining whether ~~this~~ the Temperature Policy is effectively reducing and preventing elevated temperatures over the long-term.

Certification

I, Catherine Kuhlman, Executive Officer do hereby certify that the foregoing is a full, true, and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, North Coast Region, on ~~MONTH DATE~~ September 29, 2011

Catherine Kuhlman
Executive Officer

DRAFT