



2009 Russian River Biological Opinion Annual Report – Highlights

The Biological Opinion includes six Reasonable and Prudent Alternatives (RPA) that require the Sonoma County Water Agency (Water Agency) to conduct a variety of studies, monitoring and other activities. The purpose of the RPAs is to reduce or mitigate the impact of the Water Agency’s activities on endangered coho salmon and threatened steelhead.

Below is a summary of RPA requirements with a description of the Water Agency’s response, as described in the 2009 Annual Report (the time period covered by the Annual Report ranges from the date the Biological Opinion was released in September 2008 through 2009).

Public Outreach

Requirement. The Water Agency must, with the support of National Marine Fisheries Service (NMFS) staff, conduct outreach “to affected parties in the Russian River watershed” regarding permanently changing Decision 1610 (which mandate flow levels in the Russian River). The Water Agency must also update NMFS on the progress of temporary urgency changes to flows.

- ✓ A total of four community meetings were held in 2009 regarding permanent and temporary changes to Decision 1610. Two Public Policy Facilitating Committee and several smaller meetings were held with NMFS officials where flow changes were discussed.

Requirement. Within six months of the issuance of the Biological Opinion the Water Agency, in consultation with NMFS, must “conduct public outreach and education on the need to reduce estuarine impacts by avoiding mechanical breaching to the greatest extent possible.”

- ✓ Two community meetings were held in 2009 in the Jenner area. Smaller meetings were held with state parks representatives and Stewards of the Coast & Redwoods. Estuary updates have been regularly emailed to more than 50 people.

Requirement. The Water Agency, California Department of Fish and Game (CDFG) and NMFS, must work with local landowners to prioritize options for implementation of habitat enhancement in Dry Creek.

- ✓ Two community meetings were held in the Dry Creek area in 2009. A stakeholder assessment of Dry Creek landowners was conducted by the Center for Collaborative Policy, which led to the creation of a Dry Creek Advisory Group. The advisory group met four times in 2009.
- ✓ In addition to the activities described above, the Water Agency created and continually updated a webpage; developed materials; and submitted opinion pieces to local newspapers. (Annual Report pages 7-9)

Russian River & Dry Creek Flows

Requirement: Sonoma County Water Agency must petition State Water Resources Control Board (State Board) for permanent changes to Decision 1610, which establishes minimum flows in the Russian River and Dry Creek.

- ✓ SCWA filed a petition with the State Board on September 23, 2009. (Annual Report pages 10-12)

Requirement. NMFS' Russian River Biological Opinion requires that the Water Agency petition the SWRCB for temporary changes to the Decision 1610 beginning in 2010 and for each year until the SWRCB issues an order on the Water Agency's petition for the permanent changes to these requirements.

- ✓ Because of low levels in Lake Mendocino, the Water Agency petitioned the SWRCB for temporary changes in flows on April 6, 2009. The SWRCB issued a final temporary change order in May, 2009 which required the Water Agency to lower flows while increasing water quality monitoring and to develop conservation and water rights accounting plans. (Annual Report pages 13-15)

Estuary Adaptive Management

Requirement: The Water Agency, in consultation with NMFS, CDFG and the U.S. Army Corps of Engineers (Corps), is required to annually prepare a barrier beach outlet design by April 1. In 2009, the Water Agency was required to implement the barrier beach to the degree possible, given permitting constraints.

- ✓ On May 1, Philips Williams & Associates (PWA) consultants completed a draft study of options, which included an initial barrier beach outlet design. Plan was finalized in July. (Annual Report pages 16-17)
- ✓ Because of delays in obtaining a Marine Mammal Protection Act (MMPA) Incidental Harassment Authorization from NMFS, SCWA did not implement NMFS "perched lagoon" design during the two closures that occurred between June 15-October 15. The MMPA application was submitted to NMFS with a seal monitoring plan. The Water Agency, in collaboration with the Stewards of the Coast and Redwoods, began implementing the monitoring plan in July, 2009. (Annual Report pages 21-22)

Requirement: The Water Agency must conduct and record monthly surveys of the beach topography and the outlet channel.

- ✓ The Water Agency initiated two months of beach topography surveys. Work was temporarily halted until MMPA Incidental Harassment Authorization was obtained. (Annual Report pages 17-18)

Requirement: The Water Agency must continue its annual estuary water quality monitoring. The Biological Opinion requires data collection sondes to be calibrated every three weeks.

- ✓ The Water Agency installed 12 data sondes at six water quality stations in the estuary, which are calibrated every three weeks. Three bacteria and nutrient sampling sites were established. (Annual Report pages 22-26)
- ✓ Monitoring found that the lower and middle reaches of the estuary are predominantly saline environments with a thin freshwater layer that flows over the denser saltwater layer. The upper reach transitions to a predominantly freshwater environment. (Annual Report pages 28-33)
- ✓ Water temperatures were cooler closer to the mouth of the river, and became progressively warmer upstream. Temperatures were also cooler in the saline areas (ocean water is cooler than river water) and at greater depths. (Annual Report pages 33-38)
- ✓ Dissolved oxygen (DO) levels in the estuary depend upon factors such as the extent of diffusion from surrounding air and water movement, including freshwater inflow. Dissolved oxygen concentrations in the lower and middle reaches of the estuary were generally higher near the surface and DO levels were typically lower in the upper estuary when compared to the middle and lower reaches. (Annual Report pages 38-45)
- ✓ The USEPA currently doesn't have numeric nutrient criteria specifically for estuaries but 2009 results found that total nitrogen concentrations were generally below levels recommended for the protection of aquatic habitats; however total phosphorus concentrations were predominantly above recommended levels. (Annual Report pages 48-50.)
- ✓ Currently, there are no numeric guidelines that have been developed for indicator bacteria in estuarine areas. Sampling results in 2009 indicate there is a large variation in indicator bacteria levels observed through the different sections of the Estuary. (Annual report paged 48-52)
- ✓ In 2009, the estuary experienced its longest closure since the Water Agency began monitoring and managing the river mouth for flood control purposes. The barrier beach formed and the estuary closed for a period of 29 days from 6 September to 5 October. During this time the Water Agency was able to monitor the partial development of a freshwater lagoon system as freshwater inflows increased the surface layer to approximately 9 feet thick and the volume of denser saltwater in the lower layer of the water column began to decline as it seeped through the barrier beach. (Annual Report pages 52-54) Overall, there was a shift in the fish composition in the Estuary during the mouth closure and

then a re-distribution of species after the mouth reopened. During open-mouth conditions marine and estuarine fish species were found throughout the Lower and Middle Estuary. When the mouth closed, marine fish were concentrated near the river mouth where the highest salinities occurred. Species most tolerant of brackish estuarine conditions, such as starry flounder and bay pipefish, expanded their distribution and were found as far upstream as Freezeout Bar. (Annual Report page 105)

Requirement: The Water Agency is required to design and conduct ongoing extensive surveys of estuary invertebrates.

- ✓ The Water Agency completed a bathymetric (topographic) survey of the estuary that will help design a final invertebrate sampling plan. The Water Agency entered an agreement with the University Of Washington to employ a variety of methods to sample invertebrates. The invertebrate study will provide information on the availability of steelhead prey in the estuary.
- ✓ Descriptive analyses of the diet composition of 105 steelhead captured in the estuary between June 24 and September 3, 2009 indicate that epibenthic crustaceans (amphipods, isopods, mysids) and aquatic insects (water boatmen) were the typical and dominant prey in most samples. (Annual Report pages 55-75)

Requirement: From late spring to early fall (when flows are below 300 cfs at Hacienda Bridge), the Water Agency must conduct monthly surveys of steelhead in the estuary.

- ✓ The Water Agency conducted seining activities every three weeks from May to October and installed a fyke net, which was monitored daily until the end of June (the fyke net monitoring ended earlier than required because of technical difficulties). Of the 64 steelhead captured in the estuary fyke net, 59 were presmolts (Figure 4), four were smolts, and one was a hatchery-origin adult. (Annual Report pages 75-77.)

Dry Creek

Requirement: Begin Phase One of Dry Creek habitat enhancement, which includes conceptual design and planning.

- ✓ The Water Agency consultant Interfluve, Inc. completed a Current Conditions Inventory of Dry Creek. The study confirmed many assertions in the Biological Opinion regarding high water velocity, the simplification of habitat that resulted from historic practices and the current operation of Warm Springs Dam and the explosive growth of riparian vegetation from year-round creek flow. The inventory also identified dozens of opportunities for habitat enhancement. Results of the Current Conditions Report will be used to inform a detailed feasibility study for the potential enhancement sites. (Annual Report pages 120-121)

- ✓ In 2009, a group of willing Dry Creek landowners offered to serve as the first “demonstration mile” of habitat enhancement. The Water Agency and Interfluve began intensive studies of the demonstration mile reach, with the goal of building habitat enhancement one to two years ahead of the Biological Opinion schedule. (Annual Report page 120)

Requirement: SCWA must initiate a feasibility study of a Dry Creek bypass pipeline during the fall of 2008, to be completed by the end of 2010.

- ✓ Pipeline consultants HDR Inc. initiated a pipeline feasibility study. Consultants discussed the study at three community meetings and with two groups of stakeholders. (Annual Report pages 122 – 123)

Requirement: SCWA must implement five habitat enhancement projects on Dry Creek tributaries by the end of Year 3.

- ✓ SCWA contracted with Sotoyome Resource Conservation District to conduct restoration work on 1,950 feet of Grape Creek. Phase I of the project was completed in 2009. Phase II was started in 2009 and completed in 2010. (Annual Report pages 144-146)
- ✓ SCWA in collaboration with the Sonoma County Dept. Transportation and Public Works started restoration design for the Wallace Creek Fish Passage Project and Grape Creek Fish Passage Project. (Annual Report pages 146-148)

Fish Monitoring in Russian River & Dry Creek

Requirement: SCWA is required to do the following:

- Annually operate rotary screwtraps in lower Dry Creek and at Mirabel to measure juvenile Chinook, coho and steelhead.
 - Implement a field sampling effort to capture fry at several Dry Creek locations.
 - Conduct annual juvenile steelhead and coho salmon rearing surveys pre- and post-habitat enhancement projects.
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- ✓ In April, SCWA installed and began operating a rotary screwtrap in Dry Creek, capturing 226 steelhead smolts (a lifestage migrating to the ocean), 21,600 Chinook smolts and 10 coho smolts. ((Annual Report pages 123-131).
 - ✓ 2009 marked the 10th year of monitoring at Mirabel. The screwtrap was installed on March 31 and removed on July 16. During that time, the trap captured 74 wild steelhead par, 33 steelhead smolts, 1,399 Chinook and 213 coho salmon smolts. The 2009 captures were substantially below average. (Annual Report pages 154-164)
 - ✓ Field sampling of fry and juvenile steelhead and coho presented complex logistical challenges – primarily associated with fast-moving water in Dry Creek. The 2009 results suggest that backpack electrofishing is likely to be the most successful method of sampling, with snorkeling and electrofishing in a closed-off area of the creek least successful. (Annual Report pages 132-143.)

- ✓ While not a requirement of the Biological Opinion, in 2009 the Water Agency continued monitoring Chinook spawning grounds in the Russian River and Dry Creek. Chinook salmon redds (nests) were similar during the 7 years of study, with 496 redds found in 2009. In the Lower Healdsburg reach, most redds were found near the confluence of the river and Dry Creek. Redds in the Upper Healdsburg reach were clustered in the center and upstream end of the reach. In Alexander Valley, redds were clustered in the center of the reach. Redds were distributed throughout both the Canyon and Ukiah reaches. In the Dry Creek densities were highest in the upper part of the reach. (Annual Report pages 175-186)

Mirabel Fish Screen and Wohler Ponds

Requirement: SCWA shall complete design of the new fish screen at Mirabel within three years of the issuance of this biological opinion.

- ✓ In September 2009, SCWA, NMFS, CFDG and consultants Prunuske Chatham, Inc reviewed and commented on the Mirabel Fish Feasibility Report. A conceptual design was selected and the next phase of design started. The preferred concept design includes a new intake with an inclined flat plate fish screen system, an oversized screen for increased bypass flow control and capacity, and a bypass fishway in the form of a vertical slot fish ladder. It also includes a fish viewing chamber with a window which will allow for real-time monitoring along with education and outreach opportunities. (Annual Report pages 152-153)
- ✓ 2009 marked the 10th year of the Water Agency's fish ladder video monitoring program. While the survey period varies depending on how long the rubber dam is inflated, the program provides a good indication of the relative strength of the Chinook return. In 2009, 1,801 adult Chinook, six coho and 154 steelhead were captured on video. (Annual Report pages 164-174)

Requirement: Within three years of the issuance of this biological opinion, SCWA shall decommission or modify the infiltration ponds on the East side of the Russian River at the Mirabel/Wohler facility.

- ✓ In September 2009, SCWA submitted a preliminary plan for the pond decommissioning to NMFS and CFDG for review and comment. The proposed project consists of decommissioning two infiltration ponds by removing manual valves adjacent to the ponds and grading each pond at a slope of 1 percent toward the river. The slope will allow the ponds to fill with water during flood events but will allow them to drain at the same rate as the receding river, preventing fish from becoming stranded. (Annual Report pages 153-154)

Coho Broodstock Program

Requirement: The Water Agency is required to increase production of smolts from the Russian River Coho Salmon Broodstock Hatchery Program (Coho Program), located at

the Don Clausen Fish Facility (Warm Springs Hatchery) at the base of Lake Sonoma on Dry Creek.

- ✓ In 2009, the Water Agency began discussions with DFG and USACE about hatchery program needs and the most effective method of providing resources. In late 2009 and early 2010, consensus was reached that the Water Agency would purchase 12 new rectangular start tanks and 3 circular tanks to be installed by USACE in 2010. (Annual Report page 151)

Consistency Determination

Requirement: In order to ensure that SCWA can cover all the costs associated with monitoring, management and habitat enhancement, CDFG requires funds be deposited for “Stage One” improvements (covering 2009-2013).

- ✓ In September 2009, the SCWA Board of Directors approved the deposit of \$7.8 million to serve as security for Stage One.